XXXVII ALL-INDIA MEDICAL CONFERENCE, KANPUR : : JANUARY 4, 5 & 6 1962

JOURNAL

of the

INDIAN MEDICAL ASSOCIATION

VOLUME 37 NUMBER 10 CALCUTTA NOVEMBER 16, 1961

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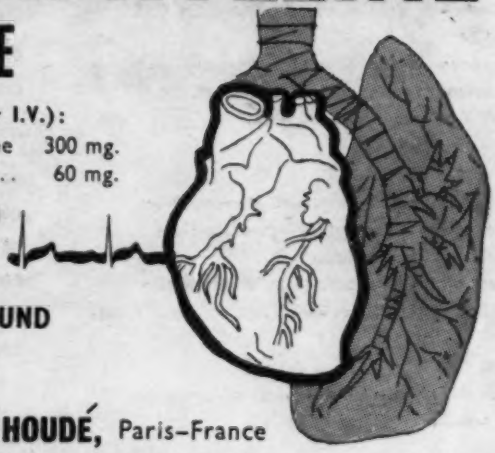

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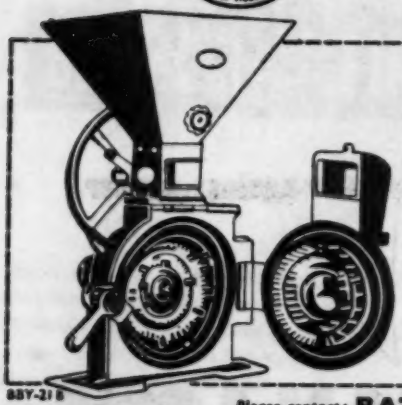

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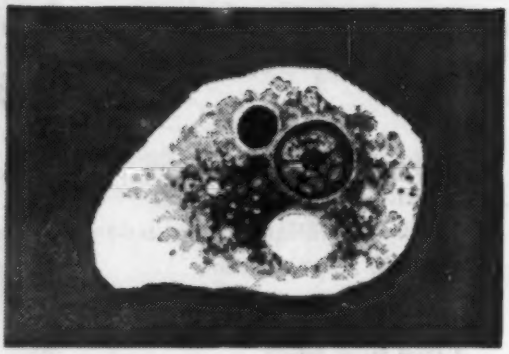

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2 Zavala, D. C., and Hamilton, H. E. : *Ann. Int. Med., 36* : 110, Jan., 1952
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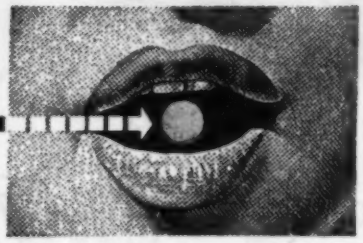

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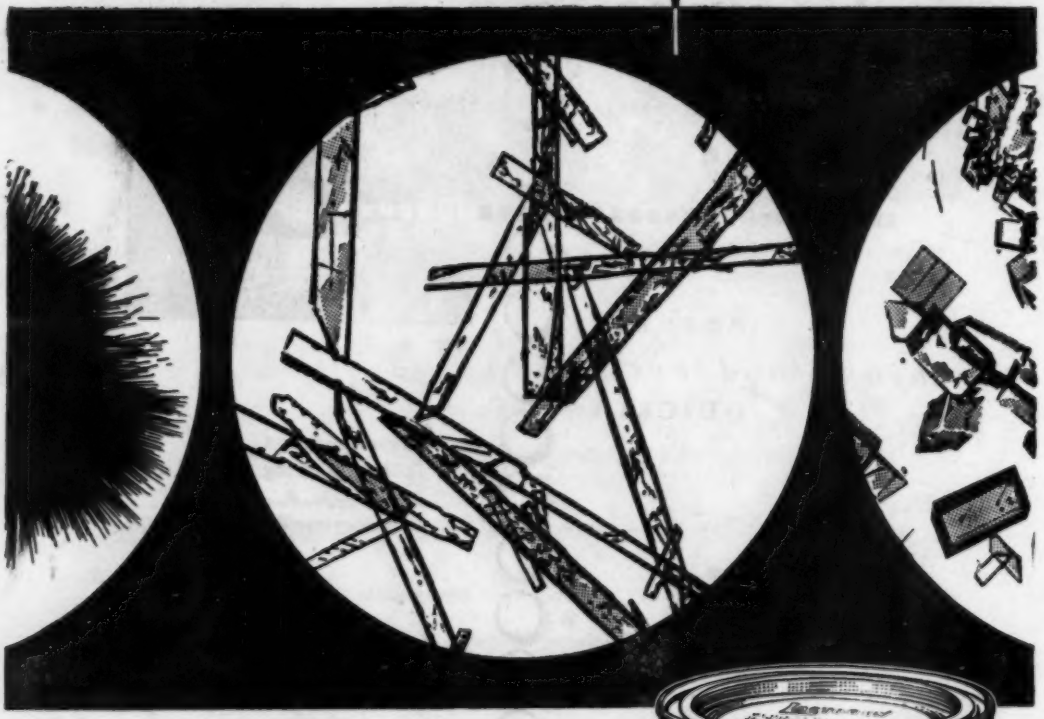

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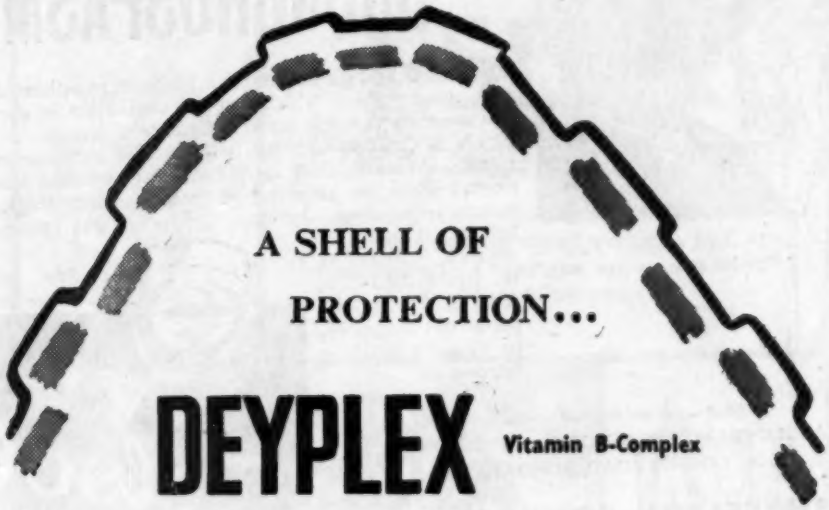

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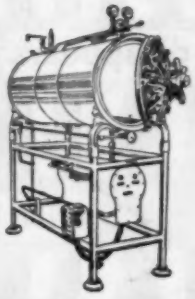

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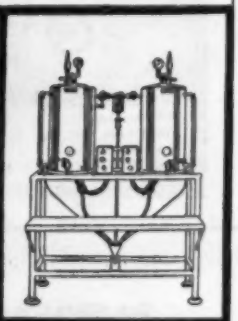

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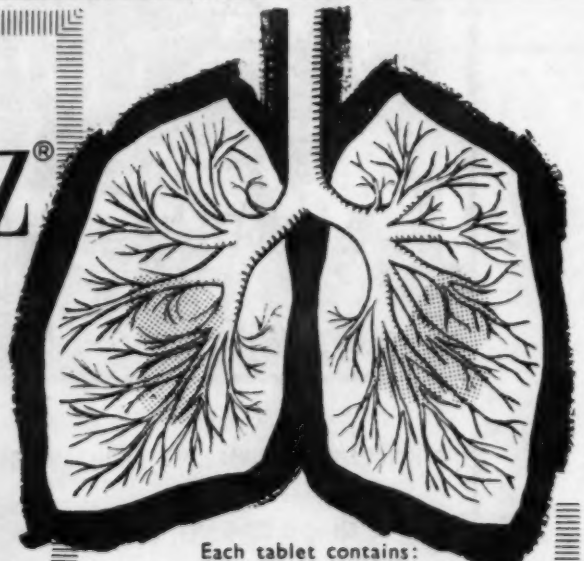

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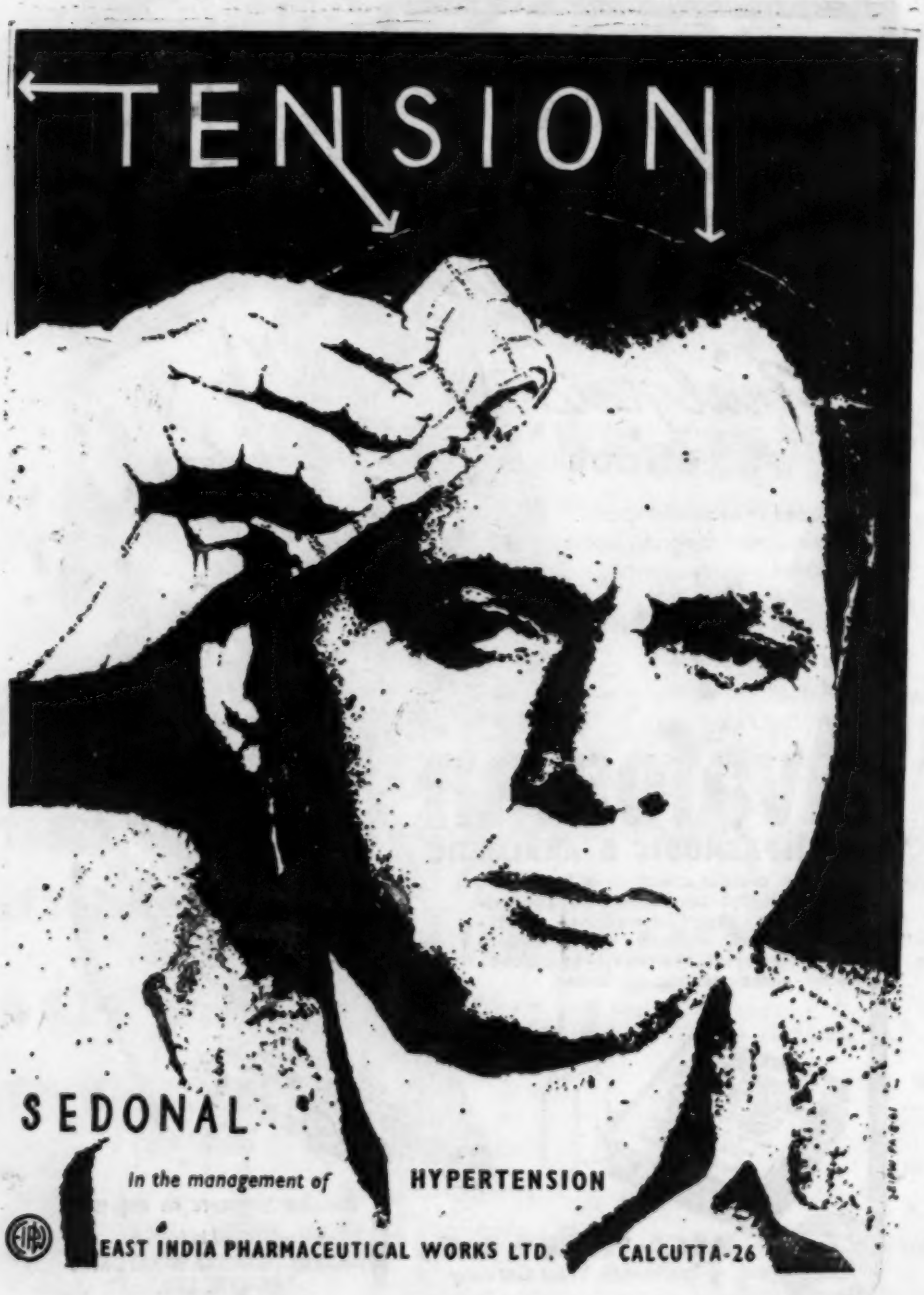
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Journal of the Indian Medical Association

VOLUME 37
NUMBER 10

PUBLISHED TWICE A MONTH
EDITOR—P. K. GUHA, M.B., M.R.C.S. (ENG.), D.O.M.S. (LOND.)

NOVEMBER 16, 1961
CALCUTTA

ORIGINAL ARTICLES

INFECTIVE HEPATITIS AS A CAUSE OF CIRRHOSIS

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In infective hepatitis the main lesion is parenchymal—the reticulum is not involved and this serves as an important function in providing necessary framework for the orderly restitution of the lobular pattern during recovery. The disease however is not without its sequelae, though most authorities (Schiff, 1956 ; Polland and Henley, 1958), agree that such sequelae are rare. The commonest complications and sequelae of viral hepatitis are hepatic coma, persistent jaundice of obstructive type, subacute hepatitis, posthepatitis syndrome, and posthepatitis cirrhosis (Sherlock, 1957). In most of the cases the late symptoms after apparently cured infective hepatitis are due to functional changes in the liver not revealed by liver biopsy and autopsy studies, but in some cases the structural changes in the liver are responsible. Scarring alone is not sufficient for the correct diagnosis of cirrhosis, there must also be a disturbance in the lobular pattern with isolated nodules of hepatic hyperplasia. It is possible only when the reticulum is also damaged along with parenchyma (Sherlock, 1948) and it occurs in subacute hepatitis, cholangiolitic hepatitis and healed acute yellow atrophy of liver.

In subacute hepatitis, a variant of typical infective hepatitis, the interstitial reticulum is involved with patchy necrosis of hepatic parenchyma. Clinically the patient shows a picture of chronic relapsing course of jaundice, develops vascular spider, splenomegaly, ascites and oedema over feet and finally neuropsychiatric syndrome. The patient either dies within 6 months of hepatocellular failure or portal hypertension, or he is left with the picture of posthepatitis cirrhosis, because healing takes place not only by condensation but also by active collagenisation of the reticulum disrupting the normal lobular pattern, and nodular hyperplasia of the liver cells. Sometimes subacute hepatitis and postnecrotic nodular cirrhosis can only be differentiated on the basis of histopathological studies (Harrison, 1958). In acute massive necrosis of the liver, the patient usually dies within 5-7 days of hepatocellular failure. If he survives, healing takes place by development of postnecrotic cirrhosis (Watson and Hoffvaner, 1946).

The question as to the relative frequency with which cirrhosis develops after a single or repeated attacks of viral hepatitis has never been answered satisfactorily. Jones and Minot (1923) described 2 cases of young patients who developed cirrhosis diagnosed clinically after catarrhal jaundice. Polack (1938) recorded 8 cases of cirrhosis after epidemic hepatitis. Cirrhosis after infective hepatitis has been demonstrated at autopsy by Fundlay *et al* (1944) and Rennei (1945) and clinically by percutaneous needle biopsy by Krarup

and Roholm (1944). Klatskin and Rappaport (1947) studied 217 cases of presumably cured infective hepatitis and found 108 (50 per cent) having hepatomegaly, pain in right hypochondrium, fat intolerance and impaired biochemical liver function tests. Liver biopsy was not done in any case but the question remains that in some cases the condition could well be due to post-hepatitis cirrhosis. Sherlock (*loc. cit.*) investigated 120 cases of apparently cured infective hepatitis by liver biopsy and found 9 cases of post-hepatitis cirrhosis, 3 well compensated and 6 either in hepatocellular failure or portal hypertension. Dible (1951) described 5 cases of typical postnecrotic cirrhosis following infective hepatitis and mentioned that this development may occur as early as within 3 months of initial jaundice. The most recent studies are of Zieve *et al.* (1953), Ruggieri (1954), Real-Encinas (1955), Craig *et al.* (1956), Lawrence (1956), Montenegro *et all.* (1958) and Silva *et al.* (1958). The relative incidence of posthepatitis cirrhosis found by these workers is 59 per cent (Ruggieri), 24 per cent (Real Encinas), 81 per cent (Craig *et al.*) and 18·8 per cent (Silva *et al.*).

On the other hand, Lucke (1944), Kalk (1956) hold the view that cirrhosis usually never follows infective hepatitis. Lucke (*loc. cit.*) thinks that there is always complete structural restoration of liver following viral hepatitis. He feels that the scarring in reported cases, was either present before the onset of infective hepatitis or was due to dense compression and condensation of the reticulum rather than due to actual collagenisation and fibrosis. Kalk (*loc. cit.*) states that cirrhosis might be due to past or recent associated nutritional deficiency along with infective hepatitis. Neefe (1957) made three extensive attempts to make a systemic survey of the persons who had infective hepatitis and followed them for 4-8 years. He found that all the three groups showed identical results, i.e., in these cases the incidence of cirrhosis was not greater than in cases which had no infective hepatitis (control group) and thus no association between infective hepatitis and cirrhosis could be established.

Keeping these diverse opinions regarding post-hepatic cirrhosis in mind, we thought of investigating the problem in Sawai Man Singh Hospital, Jaipur. From January, 1959 all cases of infective hepatitis were followed and all cases of cirrhosis with reference to any association with infective hepatitis were studied. These cases were admitted in the medical wards of our unit in S.M.S. Hospital, Jaipur. We have not included any case from the paediatric ward.

Methods and Material

There are two well documented methods of diagnosis of posthepatitis cirrhosis.

The first method is to follow all the confirmed cases of viral hepatitis diagnosed clinically and by various laboratory aids including percutaneous liver biopsy for several years, and to study them periodically with various liver function tests, liver biopsies and clinically for development of any sequelae. Along with this, the diets and other factors which may be partly or wholly responsible for the cirrhosis (if at all it develops), must also be considered.

The second method is to study all the confirmed cases of cirrhosis diagnosed clinically and by various laboratory aids regarding their past history of alcoholism, malnutrition and infective hepatitis. If the latter be present, special note should be made regarding their severity, duration and relapses. The engima, however, is how to know that the previous disease was infective hepatitis. All that can be said is that the patients gave history of a disease which clinically closely resembled infective hepatitis. The final proof in these cases may be afforded by the histopathological examination of the liver biopsy piece for the evidence of posthepatitis cirrhosis.

We have utilised both the methods but mainly the second one. During the period January 1959 to October 1960, we have studied 26 cases of infective hepatitis and 50 cases of cirrhosis. We could not follow all apparently cured infective hepatitis cases except 3 cases who came later with posthepatitis cirrhosis, because the patients never responded to follow-up correspondence. Detailed histories were taken in all cases of cirrhosis and full clinical examination was done. Biochemical studies were done regarding blood proteins, albumin globulin ratio, icteric index, van den Bergh test, thymol turbidity and flocculation tests, alkaline phosphatase and urinary urobilinogen. Finally percutaneous needle biopsy was done in 14 cases only by Silverman's needle and the liver specimen thus obtained was examined histopathologically.

Results

Fifty cases (32 males and 18 females) of cirrhosis of the liver have been studied. They were divided into two groups, viz., (a) those who gave past history of jaundice, and (b) those who denied such a history.

Group A—There was a past history of jaundice with anorexia and mild fever in 18 cases (12 males and 6 females), which included 3 cases of infective hepatitis admitted in our ward, diagnosed clinically and then readmitted within this period of study (1959-60) as cases of cirrhosis. The age of the patients varied from 12 to 60 years, but maximum age incidence was in 25 to 35 years group (8 cases which included 5 females). There was history of a single attack of jaundice in 16 cases, and 3 and 4 times in each of the remaining two cases. The duration of this jaundice varied from 4-5 days to 2½ months ; and in one case it continued till the patient developed clinical cirrhosis. The latent period between initial jaundice and clinically diagnosed cirrhosis varied from as early as 3 months to as late as 10 years, but usually within 3 years (13 cases). There was no history of alcoholism in any case and dietary deficiency revealed by poor social status and economic position was observed in 6 cases where the aetiolgy might be a mixed one. All these cases were clinically diagnosed as decompensated cirrhosis. There was splenomegaly up to 3 inches in 18 cases, ascites with oliguria and with or without general anasarca in 17 cases, anorexia in 10 cases, palpable liver in 6 cases, jaundice in 5 cases, diarrhoea and anaemia in 4 cases. Ascitic fluid was transudate in all cases. Liver function tests for parenchymal activity specially thymol turbidity and flocculation tests were abnormal in all cases. Thymol turbidity varied from 3 to 12 units and was over 6 units in 8 cases while thymol flocculation was + to ++++ in all. Liver biopsy was done in 8 cases and postnecrotic cirrhosis was diagnosed on histopathological basis in 6 cases, while in the remaining two cases the picture was suggestive of a mixed aetiology—dietary deficiency as well as necrosis.

Case Reports

Case 1—Bhagwandas, 50 years, Hindu, male, admitted on 12-6-60, complaining of jaundice, high coloured urine, low grade pyrexia, and anorexia for the last 2 months. On examination he was slightly anaemic; pulse 86 per minute, B.P. 130/80 mm. Hg. Liver was enlarged 1 inch below the costal margin and the spleen was just palpable. There was no free fluid in the abdomen. He improved with intravenous glucose.

Investigations revealed that the parenchymal functions of the liver were deranged. Details are given below :

R.B.C.—4·8 mill. per c.mm., Haemoglobin—14 g. per cent. W.B.C.—5,000 per c.mm. with polymorphs 70 per cent and lymphocytes 30 per cent. E.S.R.—40 mm. 1st hour.

Stool—N.A.D.

Urine—Bile salts +, bile pigments +.

Kahn test—Negative.

Liver function tests : Icteric index—20 units. Van den Bergh—Indirect positive. Thymol turbidity—6 units. Thymol flocculation—+. Blood proteins—7·6 g. per cent. Albumin :globulin ratio—1 :0·6.

Urinary urobilinogen—1/50.

Blood cholesterol—170 mg. per cent.

Liver biopsy showed parenchymal necrosis with marked infiltration with mononuclear cells, subacute hepatic necrosis (Fig. 1, *vide* Plate). Van Gieson's and reticulum stains did not reveal any fibrous tissue.

Follow up—This case was readmitted on 24-9-60 complaining of marked distension of the abdomen and oedema of the feet. On examination liver was 2½ in. enlarged and spleen was firm, not tender and about an inch enlarged below the costal margin. There was slight icterus, free fluid in the abdomen was present. The liver function tests were still found deranged. Liver biopsy at this stage revealed fibrous tissue disrupting the normal lobular pattern of the liver with mild mononuclear infiltration (Fig. 2, *vide* Plate).

Diagnosis—Postnecrotic cirrhosis.

Case 2—Gauri Shanker, 50 years, Hindu, male, admitted on 20-1-60 complaining of fever with chill, anorexia and constipation and slight pitting oedema over the feet for the last 24 days. There was past history of infective hepatitis 1½ years back when jaundice and anorexia lasted for 25 days. On examination the patient showed slight icterus and oedema of feet. He was confused and at times slightly delirious. Both liver and spleen were enlarged, each about an inch below the costal margin. There was no free fluid in the abdomen.

Since he was in impending precoma stage, energetic treatment with intravenous glucose, hydrocortisone and achromycin was instituted. He showed marked improvement.

The following investigations were made :

W.B.C.—5,600 per c.mm. with polymorphs 62 per cent and lymphocytes 38 per cent.

E.S.R.—50 mm. 1st hour.

Kahn test—Negative.

No M.P. seen in peripheral blood film.

Widal test and blood culture—Negative.

Blood urea—20 mg. per cent.

Urine and stool—N.A.D.

Liver function tests : Icteric index—8 units. Van den Bergh—indirect faintly positive. Thymol turbidity—6 units. Thymol flocculation—+++.

Blood proteins—6·2 g. per cent. Albumin :globulin ratio—1 :0·6.

Blood cholesterol—160 mg. per cent.

Urinary urobilinogen—1/50.

Alkaline phosphatase—8·2 Bodansky units.

Liver biopsy was done when the patient was completely well. Typical fibroblastic proliferation with mononuclear cell infiltration without any fatty infiltration

was observed. Van Gieson's stain revealed fibrous tissue (Fig. 3, *vide* Plate).

Diagnosis : Postnecrotic cirrhosis.

Case 3—Gopaldas, 16 years, Hindu, male, admitted on 1-7-59 complaining of a lump in the right hypochondrium, jaundice and itching all over the body for last 3 months. There was past history of infective hepatitis 6 months back. On examination there was slight icterus and anaemia, the lymph nodes were not enlarged. Liver enlarged 4 inches below the costal margin was quite firm and nodular. The spleen was 1½ inch enlarged and was also firm. There was no free fluid in the abdomen.

Details of investigations were as follows :

R.B.C.—3·8 mill. per c.mm. Haemoglobin—10 g. per cent. W.B.C.—5,000 per c.mm. with polymorphs 76 per cent and lymphocytes 24 per cent.

Kahn test—negative.

Stool—N.A.D.

Urine—Bile salts +, bile pigments +.

Liver function tests : Icteric index—20 units. Van den Bergh—Delayed direct positive. Thymol turbidity—4 units. Thymol flocculation—+.

Blood proteins—5·1 g. per cent. Albumin :globulin ratio—1 :0·7.

Blood cholesterol—140 mg. per cent.

Urinary urobilinogen—1/50.

Alkaline phosphatase—13 Bodansky units.

Liver biopsy—There was marked proliferation of the fibrous tissue distorting the lobular pattern of the liver. There was slight mononuclear cell infiltration (Fig. 4, *vide* Plate). The reticulum stain showed marked condensation of the fibrous tissue (Fig. 5, *vide* Plate).

Diagnosis : Postnecrotic cirrhosis.

Group B—The nutritional deficiencies and use of excessive amount of fat were thought to be important in 32 cases. There was a history of chronic alcoholism in one case only. Marked malnutrition was present in all these 32 cases. The liver biopsy was done in 6 cases. 3 of them showed typical changes of nutritional cirrhosis, i.e., fatty infiltration in the liver cells, minimal cellular infiltration and fine fibrous tissue disrupting the normal lobular pattern of liver (Fig. 6, *vide* Plate). The other three cases showed fatty liver with subacute necrosis and cirrhotic changes.

Discussion

Cirrhosis is regarded by a few (Lucke, 1944 ; Schiff, 1956 ; Neefe, 1957) as a "conditional deficiency" and infective hepatitis may only predispose to it, while many feel that cirrhosis after infective hepatitis does occur though infrequently specially in non-alcoholic group in the west. Alcoholism is not a major problem in India. In our series of 50 cases there was only one case who gave the history of chronic alcoholism for the last 20 years. Many pathologists and physicians in India hold that nutritional factors are the most important ; viral hepatitis plays an insignificant role. In our 50 cases of cirrhosis only 18 cases (36 per cent) gave history of jaundice, and though the histopatholgical examination was done only in 14 cases, typical postnecrotic cirrhosis was observed in 6 (12 per cent) and was mixed with changes of nutritional cirrhosis in another 5 (10 per cent), while 3 cases showed typical fatty liver with cirrhotic changes. This series also includes 3 definite cases of cirrhosis who were treated for infective hepatitis, and the original biopsy failed to prove cirrhosis on first admission but showed it when the signs of cirrhosis and decompensation developed. The problem of post-hepatitis cirrhosis should receive greater attention in India where both nutritional deficiency factors as well infective hepatitis are quite common.

The cause for the sequelae of the infective hepatitis has not been definitely determined. Oliphanter *et al.* (1943), could not demonstrate active virus in the blood 2½ months after the jaundice had cleared. Neefe *et al.* (1947) also failed to prove the presence of virus in the liver of the patients of chronic hepatitis. Kunkel *et al.* (1956) think that the cause may be different in either sex. Excess of oestrogen might be playing some role in the pathogenesis of cirrhosis in young females where no other cause is apparent. Administration of oestrogen made the patients very sick while cortisone brought about remarkable improvement in the cases. These effects of oestrogen and cortisone raise the possibility of some specific endocrine influence in young females which modifies the usual benign course of infective hepatitis and may thus lead to the development of posthepatitis cirrhosis. We may remark here that infective hepatitis is of bad omen in later months of pregnancy and it might be due to high oestrogen level during the third trimester. Cortisone is a major advance in its therapy.

Summary

The relative incidence of posthepatitis cirrhosis is emphasised. 50 cases of cirrhosis are studied in detail to find out the incidence of post-hepatitis cirrhosis (as revealed by clinical history). Only 18 cases (36 per cent) gave past history of jaundice.

Liver biopsies were done in 14 cases and their histopathology studied in detail. Only 6 cases (12 per cent) proved to be uncomplicated posthepatitis cirrhosis while in another 5 (10 per cent) it was mixed with nutritional cirrhosis.

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HEREDITARY ATAXIA

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The diagnosis of hereditary ataxia includes a group of closely related degenerative disorders, often hereditary or familial, characterised clinically by incoordination and pathologically by degeneration seen in cerebellum, olives, the long ascending and descending tracts of the spinal cord and the optic nerves, singly or in varying combinations.

The disease is not uncommon in our experience and this paper records a series of 32 cases seen at Lahore, Amritsar and Patiala during 1947-60. In the absence of reliable statistics it is not possible to comment on the total incidence of the disease, but 11 patients were derived from a series of 5,000 private cases seen by one of us over a period of about 10 years.

CASE REPORTS

FIRST FAMILY :

A Parsi family was seen at Lahore in 1947 with 8 children, three of whom were noticed to be backward at games. They were all healthy at birth and their milestones were normal. The affected children developed ungainly gait at the age of about two years. The other children according to parents were quite fit. The three affected children could not progress properly at school because their hands did not move well. They had to be helped in almost everything as they could not even put on their clothes. They were otherwise stated to be quite intelligent. Two of them could not talk properly at the time of observation. No other relative, near or far, was known to have instability of gait or a speech defect.

Case 1—I. M., a 15 year old girl, fourth in order of birth, was noticed to have defective gait at the age of about two years. She was born at full term and started walking like other children although her speech was never quite normal. Since 1946 her speech seemed

to have worsened rather quickly. She was backward at school as she could not write or speak properly. There was no relevant past illness. On examination in 1947, a marked lateral nystagmus was present and involuntary tremors of the tongue and eyelids were seen. Other cranial nerves were normal. No abnormal rigidity or flaccidity could be appreciated in the limbs. In the upper extremities some wasting of small muscles of both hands was present with hyperextension of the interphalangeal joints. Intention tremors and dysdiadokokinesia were present. There was no superficial or deep sensory deficit. The tendon jerks were present and equal on both the sides except the ankle jerks which were sluggish. There was a bilateral extensor plantar response. The gait was ungainly. The arches of both the feet were very high. Spine was normal. No other congenital abnormality was detected.

Case 2—D., a 12 year old girl, was a normal child till the age of about three years. She had history of having fallen from a minor height while about three years old. She was noticed to suffer from attacks of emotional outbursts and would cry for hours on end. Her teacher had noticed for the past 6 to 12 months that she would not play games or run about. She could not write properly. On examination the speech was scanning. Lateral nystagmus was present but no other cranial nerve abnormality was detected. Dysdiadokokinesia was present along with slight intention tremor. There was bilateral weakness of the interossei. There was no superficial or deep sensory loss. Deep reflexes in lower limbs were normal and equal. Plantar reflex was extensor on both sides. The gait was slightly ataxic.

Case 3—P., a 10 year old girl, was not normal on her legs for the previous two years as stated by her mother. Lately the teacher had complained that the girl would not take part in the games. Apart from this there was no other disability. On examination, lateral nystagmus was present. No motor or sensory deficit could be detected. Deep reflexes in upper limbs were equal and normal. The knee and ankle jerks were brisk with an extensor plantar response on both sides. She had a clumsy gait and showed marked pes cavus.

Four other children of this family were also examined. The eldest daughter aged 22 years had high arches in both feet and slight nystagmus but no other abnormality was detectable. Another girl, aged 19 and third in the order of birth, showed no defect at all. The 20 year old boy, second in order of birth, showed nystagmus as the only abnormality. The last child, a two year old girl, showed no abnormality. Parents were normal.

Comments—This Parsi family showed three clinical examples of Friedreich's ataxia, while two other children showed minor findings like nystagmus and high arched feet. It is interesting to note that out of 8 siblings, 3 had clinical disease and 2 had forme fruste while both the parents and other near relatives were completely unaffected.

SECOND FAMILY :

A family seen at Patiala in November, 1956, had five children two of whom were known to have clumsy gait for over 5 years. The rest of the children, according to the parents, were quite normal. No other relative, near or distant, was known to be suffering from such a malady.

CASE REPORTS

Case 4—P. K., a 16 year old girl, was admitted in the Rajendra Hospital, Patiala, in November 1956 with complaints of inability to walk properly for 6 years and pain all over the body for 18 months. The difficulty in walking gradually progressed and made her stagger whenever she walked. She had also noticed unsteadiness of her hands and could not do needlework. Of late, she could not hold anything in her hands properly. There was no relevant past illness. Her elder brother aged 18 years (Case 5) was also suffering from a similar disability for about 5 years. No one else in the family had any complaint.

On examination higher functions and cranial nerves were normal. The gait was markedly ataxic. Marked incoordination was demonstrated by the finger-nose and knee-heel tests and dysdiadokokinesia was present. There was hypotonia in both upper and lower extremities. On stretching the hands straight there was hyperextension at the metacarpophalangeal joints. No superficial or deep sensory loss could be detected. Deep jerks were equally brisk on both the sides with a bilateral extensor plantar response. Scoliosis of the spine was present with bilateral pes cavus deformity. No other abnormality in other systems was detected.

Laboratory investigations including cerebrospinal fluid examination, serum calcium and electrocardiogram were normal.

Case 5—H. S., an 18 year old boy (elder brother of Case 4) had a peculiar gait for the past 5 years. He connected the onset of his trouble to a fall from a cycle about five and a half years back. A couple of months later he had developed difficulty in walking which was accompanied by vague pain all over the body. The disability had been slowly progressive and for the past one year he had 'shaking' of hands especially when attempting to write anything. His voice had also changed and he had difficulty in speaking. There was no relevant past illness. On examination, higher functions were normal. Speech was scanning. Fine nystagmoid movements were present on lateral deviation of the eyes to the right and paralysis of the left sixth cranial nerve (presumably congenital) was present. The knee-heel test did not show incoordination. There was no superficial or deep sensory loss. All deep reflexes were brisk with an extensor plantar response on both the sides. Scoliosis of the spine was present. The electrocardiogram was normal.

Case 6—R. S., an 11 year old boy (younger brother of Cases 4 and 5) had no complaints. On neurological examination, there was no abnormality in higher functions or the cranial nerves. The speech, however, was scanning. In the extremities no motor or sensory deficit was detected. Deep reflexes were brisk on both the sides with bilateral extensor plantar response. There

were no deformities. The rest of the systemic examination did not reveal any abnormality. The electrocardiogram was normal.

The remaining members of the family consisting of 2 other siblings and the parents were normal. The electrocardiograms of the whole family including the parents were normal.

Comments—This family consisting of five members had three siblings affected. The elder girl and boy were examples of Friedreich's ataxia with varying involvement while the younger boy had mainly pyramidal involvement (? hereditary spastic ataxia). The other siblings, parents and near relatives had no abnormal findings.

ISOLATED CASES :

The case reported below was one of delayed ouset of the malady with involvement of cerebellar and pyramidal systems without any skeletal abnormality. It is interesting to note that she was an albino.

Case 7—S. D., a female, aged 32 years, was sent at Amritsar in December 1954 with the complaint of gradual weakness of both the legs for the previous 19 months. The onset was insidious and the weakness of legs gradually progressed to make walking difficult for her and she tended to fall, more so on the left side. There was no relevant past illness. No one in the family was known to have suffered from such a malady. On examination, she was an albino. Her higher functions including the speech were normal. She walked with a spastic gait. Nystagmus was present on lateral deviation of the eyes. No other abnormality was detected in the cranial nerves. Incoordination was present on finger-nose and the knee-heel test. All the tendon jerks were equally brisk with bilateral extensor planter response. There was no superficial or deep sensory deficit in either upper or lower extremities. The laboratory investigations did not reveal any abnormality.

The case described below had predominantly cerebellar form of the disease and a late onset. She probably belonged to group 3 of Greenfield's classification (*q.v.*). Absence of family history and findings suggesting congenital cardiac lesion are of significance.

Case 8—K. K., female, aged 50 years, was seen at Amritsar in July, 1955 with the complaints of cough and expectoration for 12 years and inability to walk and perform any work for 5 years. She had been having chronic cough with mucoid expectoration for the past 12 years, unaccompanied by haemoptysis, postural relationship or febrile episodes. For the previous 5 years she had developed weakness with gradual disability of both the upper and lower limbs and found it difficult to do any work with her hands and to walk properly. No one in the family was known to have suffered from a similar trouble. On examination, the higher functions including speech were normal. Coarse horizontal nystagmas was present. No cranial nerve abnormality could be found. Fundus could not be seen due to lenticular opacity. Incoordination was present in both upper and lower extremities. There was no superficial or deep sensory loss. Deep jerks of both the upper and lower extremities were brisk with extensor plantar response on both sides. A thrill was palpable in the pulmonary area. There was a loud systolic murmur (grade 4) and a faint pulmonary second sound. No other abnormality was detected in the rest of the systemic examination. Laboratory investigations including a cerebrospinal fluid examination showed no abnormality. Skiagram of the chest revealed an enlarged heart shadow. Electrocardiogram showed right ventricular hypertrophy.

Discussion

Greenfield (1954) in his monograph modified the classification of Holmes (1910) and described the follwing forms of spinocerebellar ataxia : (1) Predominantly spinal forms—these include Friedreich's ataxia, hereditary spastic ataxia (including Sanger-Brown's and Marie's ataxia). (2) Spinocerebellar forms—these include Menzal type of hereditary ataxia and subacute spinocerebellar degeneration. (3) Predominantly cerebellar forms—this group includes Holmes' type of hereditary ataxia, diffuse atrophy of Purkinje cells, olivopontocerebellar atrophy and dentatorubral atrophy.

According to the above classification the various types of heredofamilial ataxias encountered by us are shown in Table 1.

TABLE 1—SHOWING TYPES OF HEREDOFAMILIAL ATAXIAS IN AUTHORS' SERIES

Types	No. of cases
1. Predominantly spinal forms	
(a) Friedreich's ataxia	27
(b) Hereditary spastic ataxia ...	1
2. Predominantly cerebellar forms ...	4
Total ...	32

So many varieties of hereditary ataxia have been mentioned in the literature that no useful purpose will be served by describing each in detail. Friedreich's ataxia is relatively the most common type seen. The other important forms are hereditary spastic paraplegia, the varieties named after Sanger-Brown and Marie and the progressive cerebellar degeneration.

Friedreich of Heidelberg in 1861 referred to a series of cases in young patients with familial ataxia. Soon after, in 1863 he described six more cases, four of whom were siblings from one family and two from another family. He reported post-

mortem findings in three cases. He called the condition *hereditare ataxie* and claimed it to be a separate entity. After some controversy among the leading neurologists of the time Friedreich's view was finally accepted in 1884. Brousse (1882) in his mongraph proposed that this form of hereditary ataxia be called 'Friedreich's ataxia'.

Variable degeneration of certain neuronal systems from periphery to the centre with eventual complete destruction of the cell body is the basic pathological process in spinocerebellar degenerations. The inherited abnormality is at the root of most of hereditary ataxias though variation in this tendency, dominant or recessive, is the explanation of certain sporadic cases on the one hand and strictly hereditary group on the other. However, it is far from clear what is inherited. Many workers in the past have emphasised that spinal cord was abnormally short in these patients and it failed to stand the wear and tear of life. However, it fails to explain the remarkably similar age of onset in various members of an affected family or the presence of other congenital malformations of the cerebellum or its afferent systems seen in some cases of hereditary ataxias.

Recent clinical and experimental work (Ord and Thompson, 1952 ; Burnet, 1953 ; Cavanagh, 1954) suggests that these diseases may possibly be related to inherited deficiencies in certain enzyme systems concerned with the nutrition of neurone. Besides the hereditary background certain extrinsic factors, e.g., alcoholism, malnutrition, congenital or acquired syphilis and acute exanthemata of childhood may precipitate the disease earlier than the expected age of onset (Brain, 1955). None of the cases in the present series showed such a background.

Degeneration of ectodermal elements of the nervous system is the hall-mark of hereditary ataxias. The brunt is borne by the spinal cord or cerebellum. In spinal forms some degenerative changes are usually found in all the long ascending and descending tracts but the variability in relative damage to these tracts determines the nature of clinical picture. Thus in hereditary spastic paralysis, pyramidal damage is most prominent (Case 6). In Friedreich's ataxia, pyramidal tracts, posterior columns especially tract of Goll, the dorsal spinocerebellar tracts and ganglion cells of Clarke's column are mostly involved, while in purely cerebellar ataxias changes are most conspicuous in the cerebellar tracts. However, there are atypical intermediate forms which defy proper classification emphasising the unity of cerebellar degenerations. The further discussion concerns our observations in cases of Friedreich's ataxia which constituted 84·4 per cent (27 cases) of our series. The detailed clinical data of 15 cases of the present series are presented in Table 2.

The common age of onset in cases of Friedreich's ataxia is below 20 years. In thirteen (48·1 per cent) of our cases the age of onset was below 10 years and ten (37·1 per cent) were between the ages of 10 and 20 years while only four (14·8 per cent) started after the age of 20 years. However, at the time of first observation the youngest in the present series was 8 years old and the oldest 40 years old. In Mollaret's (1929) series the age of onset in more than half the cases was below 10 years and in none of the cases did it start after the age of 25 years.

The earliest symptom in most of the cases of Friedreich's ataxia almost always starts with clumsiness of gait, which was present in 23 (85·2 per cent) of our cases. An interval of months or years often separates the next symptoms like ataxia of the hands or dysarthria of speech, though at times, the latter may be an early symptom. At times pes cavus is an early sign (present in 15 of our cases) which may precede ataxia of gait especially in younger siblings. Kyphoscoliosis is comparatively less constant and often appears during the course of the disease. The gait of Friedreich's ataxia was aptly described by Charcot as 'tabetocerebellar', indicating the involvement of posterior columns and cerebellar components. The patient walks on a broad base and tends to reel or stagger. In severe cases not only walking but even standing without support is impossible.

Friedreich observed swaying of the body when one of his patients attempted to stand, and nodding and swaying of the head when a bed-ridden patient tried to sit up. This, he called 'static ataxia' and considered it important in distinguishing the disease from locomotor ataxia. Choreiform instability in arms and face in the later stages of the disease was noted by Charcot. One of the patients included in the present communication showed choreiform movements in arms and the face, becoming prominent on talking or moving the hands. Nystagmus is seen in more than half the cases and is most marked on lateral ocular movement. We observed it in 18 (66·6 per cent) of our cases.

Pyramidal degeneration leads to weakness, most marked in lower limbs, with loss of abdominal reflexes and extensor plantar response. The tendon jerks may be lost, ankle earlier than knee jerks, due to the involvement of posterior columns. Sensory changes are inconstant and variable. Subjective sensory complaints are seldom seen. Sense of position, passive movement and sense of vibration are usually absent especially in the

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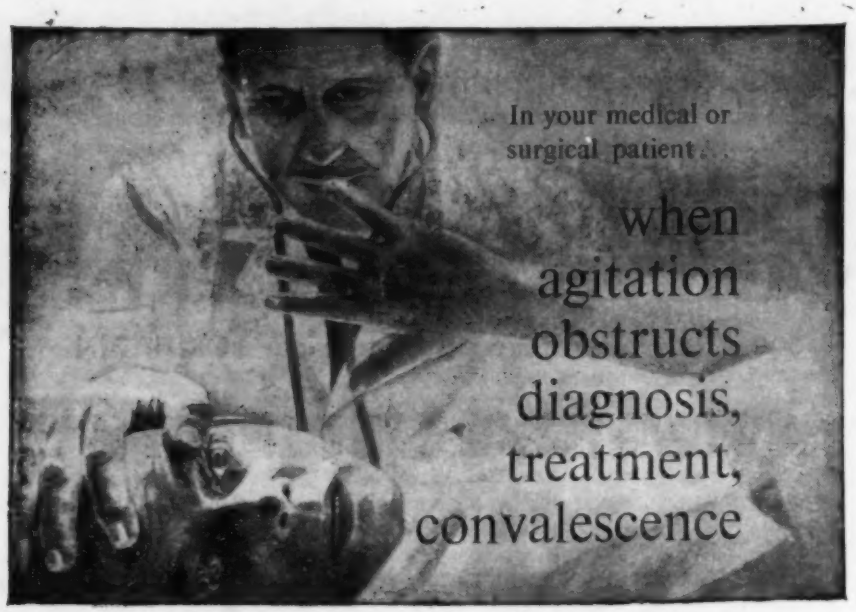

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TABLE 2—SHOWING DETAILED CLINICAL SYMPTOMATOLOGY OF 32 CASES OF THE AUTHORS' SERIES

S. No.	Name	Age (years)	Sex	Reflexes			Deep sensibility	Nystagmus	Incoordination	Deformities		Associated abnormalities	E.C.G.	Heredofamilial history
				Knee jerk	Ankle jerk	Plantar				Pes cavus	Scoliosis			
1	M	15	F	+	+	Extensor	Normal	+	+	+	–	Tremors of tongue, wasting of small muscles of hand with hyperextension at interphalangeal joints	...	+
2	D	12	F	+	+	Extensor	Normal	+	+	–	–	Bilateral weakness of interossei	...	+
3	P	10	F	++	++	Extensor	Normal	+	–	+	–	Nil	...	+
4	PK	16	F	++	++	Extensor	Normal	–	+	+	+	Nil	Normal	+
5	HS	18	M	++	++	Extensor	Normal	+	+	–	+	Nil	Normal	+
6	RS	11	M	++	++	Extensor	Normal	–	–	–	–	Nil	Normal	+
7	SD	32	F	++	++	Extensor	Normal	+	+	–	–	Albino	...	–
8	RM	16	M	–	–	Extensor	Normal	–	+	+	+	Nil	...	+
9	JR	12	M	+	–	Flexor	Absent in lower limbs	–	+	+	–	Nil	...	+
10	AN	40	M	++	–	Extensor	Absent in upper and lower limbs	+	+	–	–	Nil	Normal	–
11	MS	16	M	–	–	Extensor	Normal	–	+	+	–	Nil	...	–
12	KK	50	F	++	++	Extensor	Normal	+	+	–	–	Thrill and loud systolic murmur in pulmonary area; x-ray—heart enlarged	Abnormal	–
13	CR	27	M	–	–	Extensor	Absent in lower limbs	+	+	+	–	Nil	Normal	–
14	DC	22	M	+	–	Extensor	Absent in lower limbs	–	+	+	–	Nil	Normal	–
15	DS	31	M	++	–	Extensor	Absent in lower limbs	+	+	–	–	Facial grimaces and involuntary hand movements while talking	Normal	–
16	HK	11	F	–	–	Flexor	Normal	+	+	+	+	Nil	Normal	–
17	S	10	M	–	–	Flexor	Normal	–	+	–	–	Mental retardation	...	–
18	KS	28	M	+	+	Flexor	Normal	–	+	–	–	Nil	...	–
19	BS	16	M	+	+	Extensor	Normal	+	+	+	–	Nil	Normal	–
20	DC	25	M	++	+	Extensor	Absent in lower limbs	+	+	+	+	Nil	Abnormal	–
21	B	40	M	++	++	Extensor	Normal	+	+	–	–	Nil	Normal	+
22	N	9	F	–	–	Extensor	Normal	+	+	+	+	Grade 2 systolic murmur; P, normal; heart size—top normal limit	Abnormal	–
23	GC	18	M	–	–	Extensor	Absent in lower limbs	+	+	+	+	Nil	Abnormal	+

TABLE 2—*Contd.*

S. No.	Name	Age (years)	Sex	Reflexes: Knee jerk	Reflexes: Ankle jerk	Reflexes: Plantar	Deep sensibility	Nystagmus	Incoordination	Deformities: Pes cavus	Deformities: Scoliosis	Associated abnormalities	E.C.G.	Heredofamilial history
24	MD	8	F	–	–	Extensor	Normal	–	+	+	+	Grade 2 systolic murmur; P_2 normal; x-ray—heart seems to be enlarged	Abnormal	–
25	SL	25	M	–	–	Equivocal	Absent in lower limbs	+	+	–	+	Nil	Abnormal	+
26	DC	14	M	+	–	Extensor (?)	Absent in lower limbs	+	+	–	+	Bilateral complete foot drop	Abnormal	+
27	KR	15	M	+	+	Extensor	Absent in lower limbs	+	+	–	+	Nil	...	–
28	PL	12	...	–	–	Flexor	Uncooperative	+	+	–	–	Leucoderma patch in lumbar region; Grade 1-2 systolic murmur	...	–
29	SK	17	F	–	–	Extensor	Absent in lower limbs	–	+	+	–	Nil	Abnormal	–
30	VV	45	F	+	+	Flexor	Normal	–	+	–	–	Nil	Normal	–
31	ML	51	M	+	+	Extensor	Normal	–	+	–	–	Nil	...	+
32	BR	48	M	+	+	Flexor	Normal	+	+	–	–	Nil	...	+

M=Male; F=Female; +=Present; ++=Exaggerated; ...=Not recorded.

lower limbs. Deep sensibility was lost in 9 (33·3 per cent) of our cases. Sphincters usually escape till very late stages of the disease. None of the cases of the present series had involvement of sphincters. Occasionally optic atrophy and deafness are seen. The mental condition of these patients is usually normal. However, one of our cases had mental retardation of moderate degree.

Some patients of Friedreich's ataxia may die of congestive heart failure associated at times with various arrhythmias. One of our patients had congenital pulmonary stenosis and another had frank myocardial damage seen electrocardiographically. However, the cardiovascular studies in thirteen of the 32 patients in this series of cerebellar ataxias have been reported elsewhere (Wahi *et al.*, 1959).

As for the course, some cases evolve quickly and run an acute course but the vast majority of cases move slowly but remorselessly to the bedridden stage. Few patients live for more than 20 years after the onset, most of them succumbing to intercurrent infection.

SUMMARY

A series of 32 cases of hereditary ataxias seen in the Punjab has been reported with illustrative case reports. The aetiology, classification and symptomatology of the disease have been discussed and association with albinism recorded in one individual.

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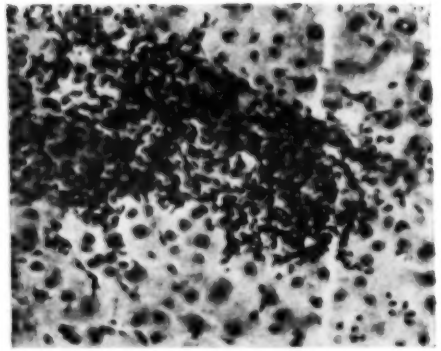

Fig. 1—Microphotograph showing parenchymal necrosis and infiltration with mononuclear cells in subacute hepatic necrosis

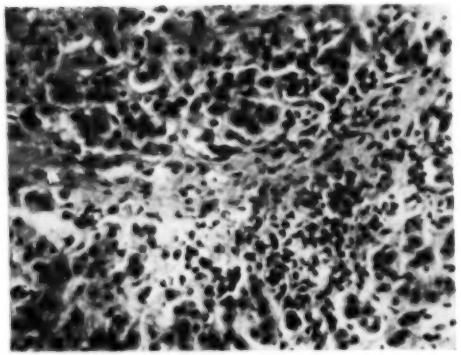

Fig. 2—Microphotograph showing fibrous tissue disrupting normal lobular pattern of liver and mononuclear infiltration in postnecrotic cirrhosis

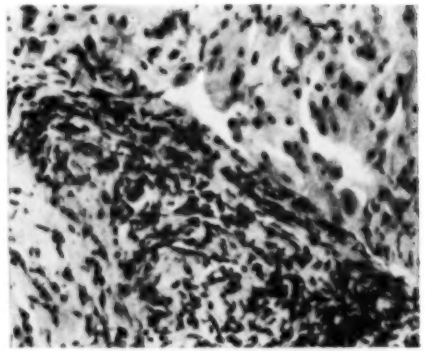

Fig. 3—Microphotograph showing in post-necrotic cirrhosis typical fibroblastic proliferation with mononuclear cell infiltration

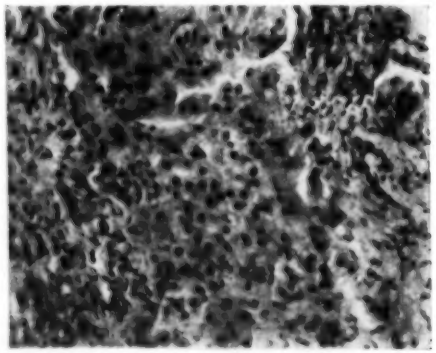

Fig. 4—Microphotograph showing marked proliferation of fibrous tissue with slight mononuclear cell infiltration in postnecrotic cirrhosis

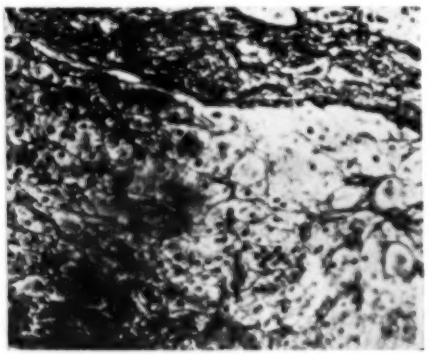

Fig. 5—Microphotograph showing marked condensation of the fibrous tissue with reticulum stain

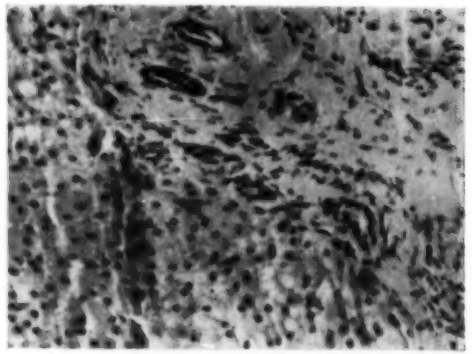

Fig. 6—Microphotograph showing typical changes of nutritional cirrhosis

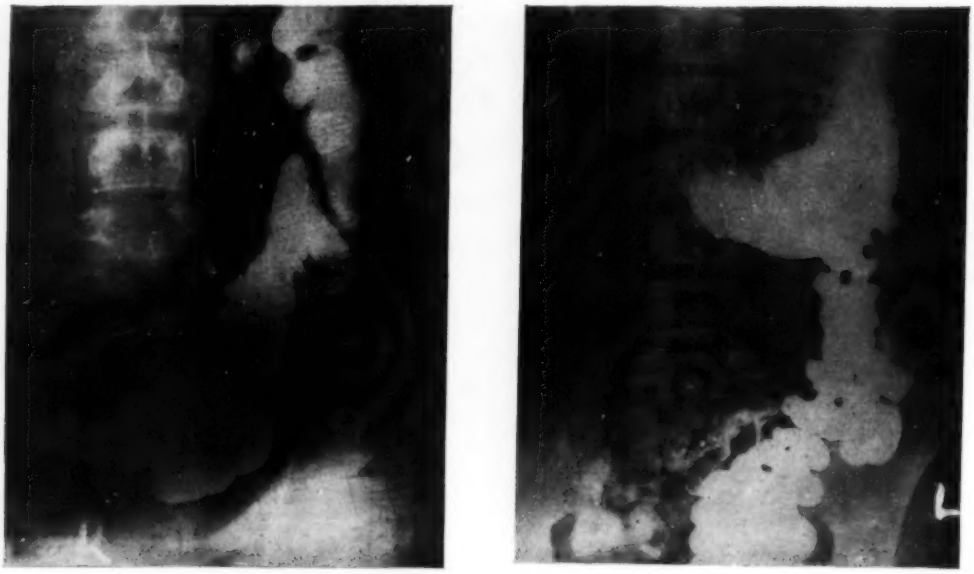

Fig. 1, A and B—Barium meal study of gastro-intestinal tract showing malrotation of the gut. The whole of the colon is lying on the left side and the small gut on the right side.

SINGH—*Malrotation of the Gut (p. 500)*

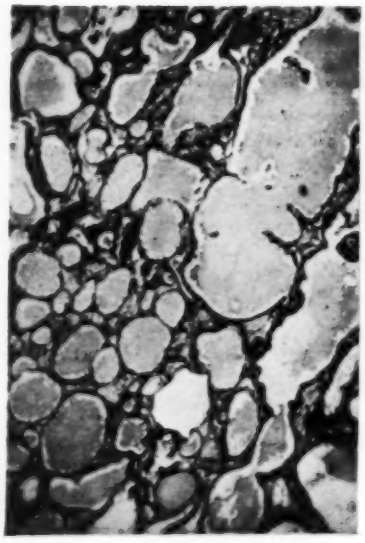

Fig. 2—Follicular adenoma of thyroid (Case 1)

Fig. 3—Colloid adenoma of thyroid (Case 1)

Fig. 1 *(above)*—Showing effect of hair-dye allergy. Fig. 2 *(below)*—Showing improvement of skin condition after tissue therapy.

SANKARAN—*Benign Metastasising Goitre (p. 502)*

RAY AND BANERJEE—*Tissue Therapy in Hair-dye Allergy (p. 505)*

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SUMMER GASTROENTERITIS IN KANPUR

A Study on 120 Cases

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Cases of acute gastroenteritis occur year after year in Uttar Pradesh and frequently the disease assumes epidemic proportions taking a heavy toll. Except in a very few cases where *Vibrio cholerae* belonging to O group (I) has been isolated, the findings have been repeatedly negative. In these studies specific microbial incitants like *Salmonella* and *Staphylococcus aureus* have been isolated in a small percentage of cases, while in the majority organisms belonging to normal intestinal flora have been isolated (Gupta *et al.*, 1957). Enteropathogenic strains of *E. coli*, which have recently been recognised as an important cause of infantile gastroenteritis have also been incriminated as a possible cause of gastroenteritis in adults. Antimicrobial therapy, in the absence of any specific aetiologic agent is based on clinical studies alone. However, clinical trials envisaging a study of relative value of different preparations, like sulpha drugs and broad spectrum antibiotics, are lacking in the literature.

Acute gastroenteritis broke out in Uttar Pradesh in July, 1960 and the disease, which to begin with, chiefly affected western districts, spread over a large part of the State. Kanpur was affected in the last week of July and during the period 19th July to 8th September, 1960, the number of admissions to D. N. P. Bagla Infectious Diseases Hospital rose from 4 cases a day to 24 cases a day.

MATERIAL AND METHODS

Cases admitted to D. N. P. Bagla Infectious Diseases Hospital, an associated hospital under G. S. V. M. Medical College, Kanpur, were taken up for study.

A history was taken specially from epidemiological point of view. As soon as a case was admitted assessment and gradation of dehydration was made based upon the duration of illness in hours, duration of anuria, number of evacuations (stools and vomitus), condition of skin, eyes, tongue, pulse and blood pressure.

Before starting any treatment a specimen of stool was collected by introducing a sterile catheter into the rectum and the material collected in the eye of catheter was washed into a wide-mouthed bottle containing buffered glycerol. Buffered glycerol solution was prepared as 30 per cent glycerine in 0·6 per cent sterile saline. 1 per cent anhydrous disodium hydrogen phosphate was added—steam being used to dissolve it, 0·02 per cent phenol red solution being added until purple pink colour was obtained. Any change of colour to yellow indicated that the reaction was no longer alkaline and the solution was discarded. Further inoculation was made on MacConkey's blood agar, nutrient agar, alkaline peptone water (*p*H 8·0) and desoxycholate citrate agar media. The inoculated media were incubated for 24 hours at 37°C and the colonies were isolated and identified by Gram's stain. Motility, fermentation of carbohydrates (1 per cent solution of lactose, glucose, dulcite, saccharose and mannite in peptone water) and other biochemical reactions like indole production, Voges Proskauer reaction, cholera red reaction, methyl red reaction, coagulase test and gelatine liquefaction test were studied.

Immediately after collection of stool for bacteriological diagnosis appropriate amount of glucose saline as assessed from the degree of dehydration was administered and subsequent infusions were given depending upon further requirement.

Alternate case was put on the particular drug under study. The drugs used were, kaolin and bismuth mixture, sulphaguanidine tablet, chloramphenicol capsule, chlortetracycline capsule, chloramphenicol and dihydrostreptomycin capsule and neomycin. The doses employed were kaolin 120 grains and bismuth carb. 20 grains, in an ounce of water and given every 4 hours. Sulphaguanidine 6 tablets as initial dose and 4 tablets every 4 hours. Chloramphenicol 2 capsules (250 mg. each) initially and 1 capsule every 4 hours. Chlortetracycline 2 capsules (250 mg. each) as first dose followed by 1 capsule every 4 hours. Chloramphenicol and dihydrostreptomycin (chloramphenicol 125 mg. and dihydrostreptomycin 125 mg. per capsule) 2 capsules as the first dose and 1 capsule every 4 hours. Neomycin in the dose of 20 mg. per pound of body weight per day.

A daily record of number of evacuations and amount of fluid administered was maintained in

each case and a close watch was maintained for complications. The number of days taken for recovery, from the day of admission to the day of discharge, was noted in each case.

Observations

120 cases were taken up for study. 6 groups were made of 20 cases each to study the effect of each drug. Care was taken that moderate and severe cases were incorporated in each group except in the group treated with kaolin and bismuth where only mild cases were incorporated.

Age incidence of cases under study showed predominance of cases between the age group of 20 to 50 years (Table 1).

Table 1—Showing Age Groups and Number of Cases in Each Group

Age group in years	No. of cases
1 to 5	4
6 to 10	12
11 to 15	8
20 to 40	50
41 to 50	34
51 to 70	12
Total	120

82 cases were males and 38 cases females. Majority of cases had moderate to severe dehydration (Table 2).

Table 2—Showing Degree of Dehydration in Cases under Study

Degree of dehydration	No. of cases
Mild	4
Moderate	56
Severe	60
Total	120

Stool culture in 115 cases showed no pathogenic organism. The predominant organism in these cases was *E.coli*. In 5 cases staphylococci were isolated which showed positive coagulase reaction, fermented mannite, produced gelatin liquefaction and brought about haemolysis of sheep R.B.C. at 37°C.

The average number of evacuations was much less with neomycin as will be seen in Table 3.

Table 3—Showing Average Number of Evacuations during the First 72 Hours with Each Group of Drug

Hours after admission	Kaolin bismuth mixture	Sulphaguanidine	Chloramphenicol	Chlortetracycline	Chloramphenicol & streptomycin	Neomycin
24	24	18	15	13	13	8
48	16	12	10	10	7	4
72	12	10	7	7	4	2

Average amount of intravenous fluids required was much less in neomycin group, as will be seen in Table 4.

Table 4—Showing Average Amount of 5 per cent Glucose Saline in Pints Given I.V. during First 72 Hours

Hours after admission	Kaolin bismuth mixture	Sulphaguanidine	Chloramphenicol	Chlortetracycline	Chloramphenicol & streptomycin	Neomycin
24	8·8	8·0	8·0	7·2	6·10	5
48	4·2	3·6	2·10	2·6	2·6	2
72	3·2	2·2	2·2	2·4	1·8	0

Incidence of complications in neomycin group was less as compared to other groups (Table 5).

Table 5—Showing Number of Cases in Different Groups Showing Complications

Complications	Kaolin bismuth mixture	Sulphaguanidine	Chloramphenicol	Chlortetracycline	Chloramphenicol and streptomycin	Neomycin
Acute renal failure	12	13	9	10	8	6
Respiratory	9	8	7	7	5	5
Hiccough	2	3	2	1	2	0

Average number of days taken for complete recovery was much less in cases treated with neomycin (Table 6).

TABLE 6—SHOWING AVERAGE NUMBER OF DAYS TAKEN FOR COMPLETE RECOVERY IN EACH GROUP

Kaolin bismuth mixture	Sulphaguanidine	Chloramphenicol	Chlortetracycline	Chloramphenicol and streptomycin	Neomycin
6·4	6·2	5·8	5·2	5·2	4·6

Number of deaths in the neomycin group was much less as compared to other groups (Table 7).

TABLE 7—SHOWING NUMBER AND PERCENTAGE OF DEATHS IN EACH GROUP

	Kaolin bismuth mixture	Sulphaguanidine	Chloramphenicol	Chlortetracycline	Chloramphenicol and streptomycin	Neomycin
No. of days ...	7	7	6	7	5	3
Per cent ...	35	35	30	35	25	15

DISCUSSION

In the present study conducted on 120 cases bacteriological examination of stools has revealed absence of unknown pathogenic organisms in 115 cases (in 101 typical *E.coli*, in 8 atypical *E.coli* and in 6 *Pseudomona pyocyaneous*). In no case was *Vibrio cholerae* or an organism of the *Salmonella* group detected. The absence of a definite pathogen in such a large number of cases and the isolation of such organisms as are normally found in the stools of unaffected individuals is also reported by Gupta *et al.* (1957). A few pathogenic strains of *E.coli*, viz., type O group IV, OIII (type alpha), *E.coli naepolitanum* and O·55 (type beta) have been identified as causing infantile gastroenteritis (Fairbrother, 1957). These enteropathogenic *E. coli* have been incriminated for causing summer gastroenteritis in adults also. Although further identification of serotypes of *E. coli* isolated in this group of cases has not been undertaken in the present study the possibility still exists that these may become pathogenic under changed circumstances especially in tropical summer and during rainy season when majority of the population has some gastrointestinal upset.

The isolation of coagulase-positive staphylococci in five cases opens the possibility of heat-resistant enterotoxin produced by these organisms as a probable causative agent (Taylor, 1947; Joiris, 1953). As these organisms may be extinct in food and even more so in stools they may have eluded isolation in a large number of the cases. Of the five cases, two only gave history of having taken 'lassi' (skimmed butter-milk) 6-8 hours before onset of illness. The remaining three and all other cases denied any history of having taken common food like meat, milk and condensed milk. Neither the time interval between the onset of symptoms and the last meal taken is favourable for consideration of staphylococcus as the causative organism.

The amount of glucose and saline necessary to correct dehydration is shown in Table 4. The group treated with sulphaguanidine has given slightly better results as compared to the group treated with kaolin and bismuth mixture, as regards the average number of daily evacuations and amount of fluid necessary to combat dehydration. Antibiotic-treated cases show better results when compared to cases treated with sulphaguanidine, the average number of evacuations during the first 24 hours of treatment being 12 as compared to 18 in the latter group (Table 3).

In the antibiotic group complications were less, recovery period short and mortality rate low. (Tables 5, 6 and 7). Of the antibiotics, neomycin proved to be most effective as judged by the rapidity with which the manifestations of disease were controlled. The average number of daily evacuations was reduced to 8 with neomycin even during the first 24 hours of treatment, the corresponding figures for sulphaguanidine, chloramphenicol and chlortetracycline being 18, 15, and 13 respectively (Table 3). The average amount of fluids necessary to correct dehydration in the neomycin treated cases was also less, thus having a direct bearing on the incidence of complications, period taken for recovery and mortality rate. Neomycin which is bactericidal to a variety of enteric pathogens and to which resistant microbial cells do not emerge rapidly *in vivo* is extremely stable and not inactivated by gastrointestinal secretions, enzymes and by products of digestion. This drug being poorly absorbed (approximately 3 per cent of the ingested amount being absorbed when administered orally), has been found very effective in enteral infections (Waksman, 1958). Even the amount absorbed is rapidly excreted if renal function is normal.

In view of non-isolation of pathogens in such a large number of cases in this series and the superiority of neomycin in controlling manifestations of acute gastroenteritis it is likely that *E. coli* was either originally of an enteropathogenic strain or had become pathogenic under changed environment of the gut. Further identification of serotypes of *E. coli* is necessary to establish its role in causing summer gastroenteritis in our State.

Summary

A study conducted on 120 cases of acute gastroenteritis has shown no pathogenic organisms in 115 cases.

Among the nonpathogenic organisms *E. coli* has been the predominant organism, having been isolated in 109 out of 115 cases.

Broad spectrum antibiotics have yielded satisfactory results as compared to sulphaguanidine.

Of the antibiotics, neomycin has appeared most effective.

It is likely that *E. coli*, either originally of an enteropathogenic strain or on becoming pathogenic under changed environment of the gut, is responsible for outbreaks of summer gastroenteritis in our State.

Acknowledgments

Our thanks are due to Dr. C. B. Singh, Principal and Senior Superintendent, G. S. V. M. Medical College, Kanpur, for giving permission to publish this paper. Our thanks go also to Dr. Raj Bahadur, Superintendent, D. N. P. Bagla Infectious Diseases Hospital for granting facilities to conduct this study on the in-patients of this hospital.

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BREATHING RESERVE AND BREATHING CAPACITY IN HEALTHY INDIAN YOUNG ADULT MALES

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Respiration is a rhythmic process which involves the least possible work on the part of the body and there is a large amount of breathing reserve that can be utilised in an emergency. Besides the simple vital capacity determinations, there are many equally simpler tests which can be carried out easily in the ordinary laboratories and which give more reliable index of pulmonary function. This subject appears to be neglected in this country and only a few workers have worked out the values for timed vital capacity (T.V.C.) and maximum breathing capacity (M.B.C.) for the Indian population (Benawri, 1955; Singh, 1957; Bajaj and Mullick, 1959). As data were not available for the breathing reserves and capacities in Indian subjects, this study was conducted with a view to find out the same.

Material and Methods

The subjects selected were medical students of age groups varying from 17 to 24 years. A special history was taken to exclude any cardio-respiratory illness. All records were taken in the morning after breakfast at 10 A.M. and the subjects were given a sufficient practice for breathing through the closed circuit Collin's 6 litre respirometer with sodalime tower and valves removed and after admitting sufficient atmospheric air. A long horizontal aluminium pointer was fixed to counterweigh the spirometer, the recording drum being removed entirely. The records were taken on a smoked paper fixed to the electric kymograph. The subjects were made to rest in a chair for about 15 minutes before the actual test was done and the records were taken in the same position. About 5·5 litres of atmospheric air were admitted into the apparatus and the subjects were first asked to perform normal breathing, the records of which were taken on the drum. After some time the subjects were asked to perform

maximum inspirations followed by forced expirations as quickly and as deeply as possible for 15 seconds. The volumes were corrected to B.T.P.S. Surface areas were calculated from their heights and weights referring to the chart for Indian adults worked out by Banerjee and Sen (1957).

Results

Pulmonary ventilation per minute was calculated from the mean value of normal records of respiration, the rate of respiration being found out from the time tracing taken below each record. Maximum breathing capacity (M.B.C.) per minute was similarly calculated. The breathing reserve (B.R.) was found out as a difference between M.B.C. and pulmonary ventilation (P.V.) in litres, from these values percentage breathing results were calculated in every case (Wright, 1955).

The results have been put down in Table 1. For better comparison the B.R. and M.B.C. have been calculated per sq. metre body surface.

Table 1—Showing Breathing Reserve and Maximum Breathing Capacity

No. of cases	Age (years)	Surface area (sq. metres)	P.V. (litres)	Breathing reserve			Maximum breathing capacity	
				litres	per cent	sq. metres	litres	sq. metres
67	19-69	1·63	10·57	88·13	88·79	56·48	98·77	59·10

The distribution of the values for the breathing reserve in all cases is shown in Fig. 1.

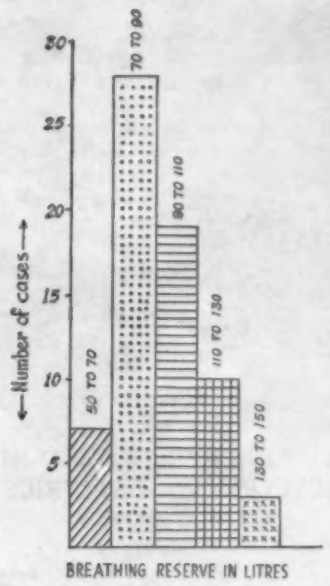

Fig. 1—Histogram Showing Breathing Reserves in Litres

Discussion

The results show that there is a large amount of pulmonary reserve available for the body during the states of emergency. Dyspnoea at rest is expected to occur when the breathing reserve falls to less than 60 per cent (Wright, 1955). This has been considered as dyspnoea point. In our series the average value for pulmonary ventilation per minute is a little higher than the expected one. The average values for tidal volume have been reported to be quite variable. It may be that the subjects were breathing through the mouth and into the closed apparatus and unnecessary apprehension on the part of some subjects could not be removed. The mean values for breathing reserve and percentage breathing reserve for the Indian population in the age group 17-24 are very scanty, hence comparable data for these figures are not available. As far as the M.B.C. values are concerned our results show lower readings than those obtained by Singh and Prabhakaran (1957). However, these values for Indian young adults are closely comparable to those obtained by Benawri *et al.* (1955) and Bajaj and Mullick (1959). It should be remembered that for all such mechanical tests for assessment of pulmonary function the subject has to be given enough practice of breathing through the closed apparatus which should also have the least possible resistance.

Summary

The breathing capacities and reserves of 67 Indian young male adults were determined and the mean values calculated.

These figures would be helpful to the clinicians for assessing the pulmonary reserves in diseases and would also help in the prognosis.

These tests are extremely simple and can be carried out as routine investigation in any laboratory.

Acknowledgments

The authors are grateful to Dr. C. J. Mistry for his kind help and the medical students of this college for their valuable co-operation.

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SPECIAL ARTICLES

INTRAVENOUS PYRROLIDINO-METHYL TETRACYCLINE IN OBSTETRICS AND GYNAECOLOGY

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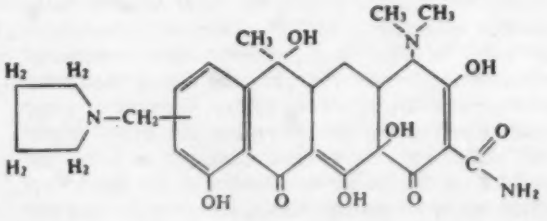
With the ever-increasing quest to try newer drugs in the practice of obstetrics and gynaecology with occasional regrets and a constant desire to see that the postoperative period is as smooth as possible free from infection and morbidity—the present study was taken up about a year ago. Since the discovery of tetracycline in 1952 by Stephans, the original compound has been undergoing various modifications in its structural formula for effective administration. Tetracycline, hydroxytetracycline and chlortetracycline compounds have been used extensively by the oral route and by modified ways *via* the intramuscular and the intravenous routes. The constant fear in the therapeutic exhibition of tetracycline is gastro-intestinal upset which has occasionally proved irreversible and fatal. Oral tetracycline inhibits the normal intestinal flora and paves the way for enterocolitis. Tetracycline therapy has produced capillary haemorrhages in various organs including the intestines, leading to ulceration and necrosis from increased concentration of the drug in the gastro-intestinal tract and inhibition of the intestinal flora. Other tetracycline compounds have a much lesser solubility in water, and are soluble only at high acid or alkaline values and hence require large amounts of solvent. Tetracycline by intramuscular route produces local pain, induration, and occasionally necrosis, and produces referred pain in the lower extremity when given in the gluteal region. Tetracycline by intravenous route has to be given by the drip method which is time-consuming and occasionally produces pain at the site of injection and even thrombophlebitis.

The therapy is not very popular because it is not easy of application. Oral tetracycline is uncertain in its effects because of its uncertain rate of absorption from the intestines and irregular serum concentration. Besides, oral tetracycline is almost impossible to administer under the circumstances in which this work is carried out. After a major obstetric or gynaecological operation, it is impossible to give tetracycline orally because of the fear of the gastro-intestinal upset and because of the general anaesthesia to these patients during the operation. The present study was undertaken because of its ease of administration and less fear of complications.

Prophylactic exhibition of an antibiotic or a chemotherapeutic drug after any major operation is a debatable question. Opinions differ according to the circumstances in which one practises. Considering the average experience, so far the surgery is concerned, postoperative use of some drugs to control sepsis is popular with majority of practitioners. The performance of a major operation involves contributions from various agencies, and there is always chance of infection. Hence some of us prefer to use certain measures to control sepsis and/or morbidity. Pyrrolidino-methyl tetracycline (reverin or PRM-TC) being popular because of its easy solubility, absence of local reaction, ease of administration, and much lesser concentration in the intestines was tried by us in some obstetric and gynaecological cases. It is a semisynthetic compound and was prepared in the laboratories of Farbwerke Hoechst by Siedel, Soeder and Lindner in 1957. The following is the structural formula of the compound.



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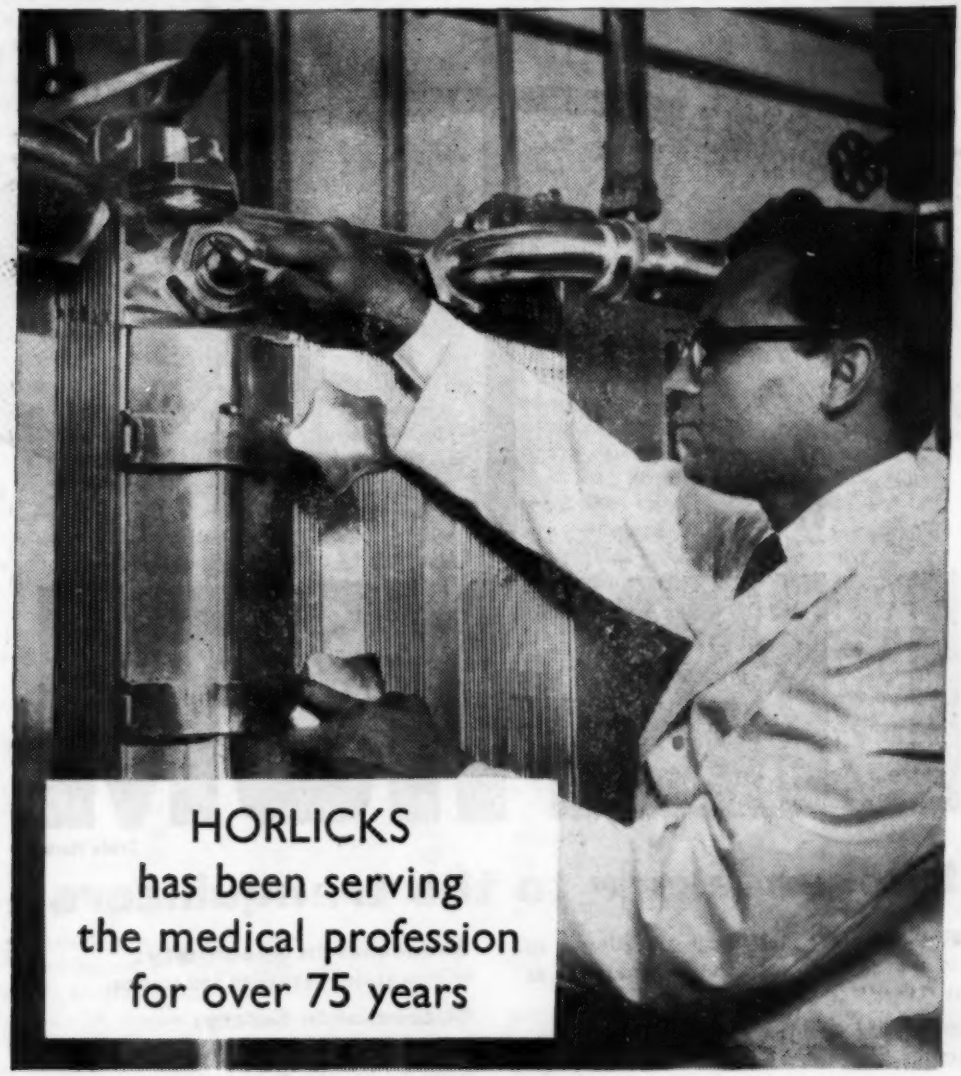

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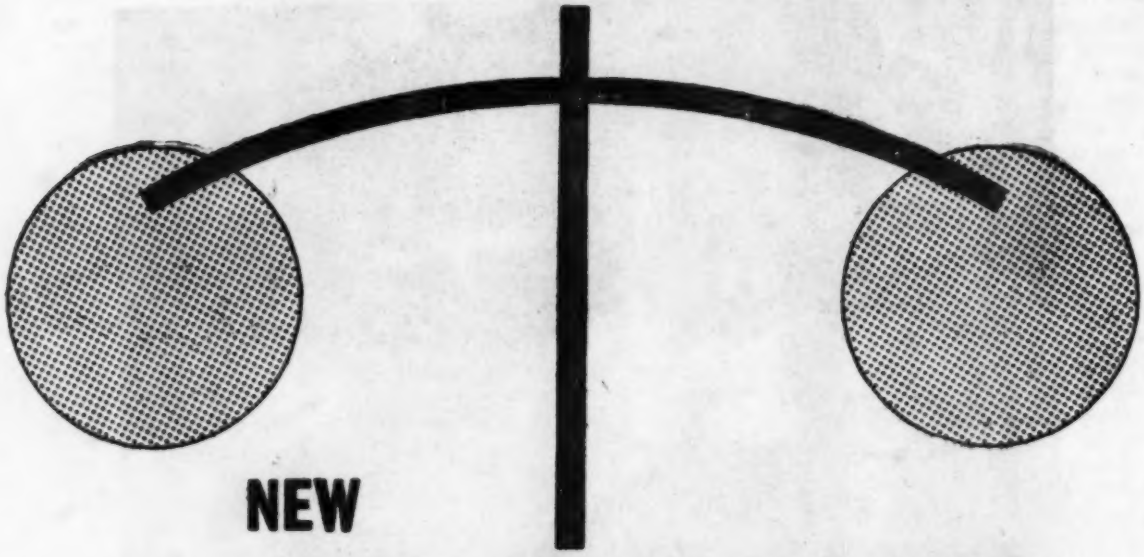

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By addition of certain organic acids, the pH is brought to 5. The solution is amphoteric. This new compound is 2500 times more soluble than tetracycline. It is produced by the amino-methylation of tetra-cycline (Mannich reaction). Because of its semisynthetic nature, it can be produced on a large scale. The drug is available in light yellow needle shaped crystals. A solution of 275 mg. of PRM-TC in 10 ml. of pyrogen-free distilled water can be injected within 60-90 seconds without any fear of untoward reactions. PRM-TC does not require large bulky infusions for administration and thus it can even be used in domiciliary practice by a general practitioner.

PRM-TC has been extensively studied for concentration in various body fluids, viz. blood, urine, faeces and breast milk (Strauch and Koch, 1958). After a single intravenous injection of 275 mg. of PRM-TC, the serum level has been studied at intervals of 1, 2, 4, 12 and 24 hours (Table 1). Similarly, the drug concentration has been estimated in urine and faeces. Its excretion has been estimated in breast milk, amniotic fluid, cord blood, pleural fluid, ascitic fluid and cerebro-spinal fluid. A similar concentration of the antibiotic in all the above fluids has been observed by various research workers while variable concentrations are seen after oral or intramuscular administration of 1000 mg. or 500 mg. of tetracycline respectively. A single injection of 275 mg. of PRM-TC maintains a constant serum level with a definite relation to its excretion in the urine. It is evident from Table 1 that this ratio is about 50 times in the first few hours and 100-200 times after 24 hours. There is very little concentration of the drug in the faeces. Breast milk studies show a good amout of excretion of the drug with it which can have enough bacteriostatic effect in complications of the breast during pregnancy and the puerperium.

TABLE 1—SHOWING AVERAGE CONCENTRATION IN VARIOUS BODY FLUIDS AFTER AN INTRAVENOUS INJECTION OF 275 MG. PRM-TC (MCG./ML. OR G.)

Hours after I.V. injection	Blood	Urine	Faeces	Breast milk
1 hour ...	7·56	—	—	1·26
2 hours ...	3·00	187·8	—	1·56
4 ,, ...	1·68	162·1	—	2·16
12 ,, ...	0·78	96·8	—	1·17
24 ,,	0·5 —0·6	70·0	2·0	0·098

Table 2 shows comparative figures of concentrations of 1000 mg. oral tetracycline and 275 mg. of PRM-TC given intravenously in blood, urine and faeces. It can be observed that the tetracycline concentration in the serum after oral administration is variable as compared to the serum level after the intravenous injection. There is no cumulative concentration effect in blood after daily intravenous injection of the drug for many days. Usually the serum concentration after oral tetracycline is 1/10 as compared to ½ after the intravenous injection of PRM-TC. Estimation of tetracycline in faeces shows a very high concentration as compared to that of PRM-TC after the intravenous injection. It is about 10-25 times higher. About 50 per cent PRM-TC (275 mg.) is excreted in the urine in 24 hours while a very low and variable excretion of tetracycline is observed after oral medication.

There are various methods available for the assessment of the efficacy of an antibiotic. In the laboratory we have the agar plate diffusion test, the serial dilution tests and investigations with the Warburg apparatus. In clinical practice, we judge the effectiveness of an antibiotic by empirical usage, bacteriological tests, or sensitivity tests. PRM-TC is useful against various strains of streptococci, staphylococci, pneumococci, *B. coli, Salmonella* group and the meningococci. The bacteriostatic effect of pyr-

TABLE 2—SHOWING A COMPARATIVE STUDY OF AVERAGE DAILY CONCENTRATIONS IN BLOOD, FAECES AND URINE (IN MCG./ML. OR G.) AFTER 1000 MG. OF ORAL TETRACYCLINE AND 275 MG. OF PRM-TC INTRAVENOUSLY

Blood or excreta	Dosage and route of administration	1st day	2nd day	3rd day	4th day	Remarks
Blood ...	Tetracycline oral, 1000 mg.	← variable →				No cumulative concentration effect
	PRM-TC i.v., 275 mg.	1·2-1·7	1·2-1·7	1·2-1·7	1·2-1·7	
Faeces ...	Tetracycline oral, 1000 mg.	10	30	60	97	Very low faecal content
	PRM-TC i.v., 275 mg.	2	6	9	4	
Urine ...	Tetracycline oral, 1000 mg.	← variable →				50% excreted in 24 hours
	PRM-TC i.v., 275 mg.	138	117	—	—	

rolidino-methyl tetracycline is not due to the liberation of tetracycline in the body, but is due to the original compound itself. It is possible that when an original compound is converted to another chain of compound, the bacteriostatic effect does not remain constant. Unlike this, PRM-TC remains as potent as the parent substance which can be compared to streptomycin and dihydrostreptomycin.

Clinical Trials

We have used this drug in 10 obstetric cases. The average age of the patients was 27·6 years—the maximum being 36, and the minimum 16. Most of these were emergency admissions, viz. five cases of caesarean section, one of abdominal hysterectomy for vesicular mole, three of septic abortions and one of craniotomy. Eight cases were given one injection of 275 mg. daily for 3 days (total 825 mg.). One case of craniotomy brought from outside and one case of septic abortion with pelvic peritonitis had 2 injections of 275 mg., totalling 550 mg. of PRM-TC daily for 3 days (total dosage 1650 mg.). In 6 cases there was no rise in temperature after 24 hours, in 3 cases the high temperature remained for 2 days and in one case it remained for more than 3 days. The drug was administered within a few hours of the operation or admission. Nine cases showed good response and only one case showed poor response.

In our obstetric series, no untoward symptom like bitter taste in the mouth, giddiness or allergic manifestation was encountered except in one case who had diarrhoea disappearing after the withdrawal of the drug.

This drug was also tried in 23 gynaecological cases. The average age of the patients was 38·3 years—the maximum being 52, and the minimum 27. The drug was given soon after the operation in all of them. There were 8 cases of total abdominal hysterectomy and 5 cases of vaginal hysterectomy. In 7 cases we did ventral suspension with either plastic tubal surgery or conservative ovarian surgery and removal of appendix when necessary ; one case of infected huge broad ligament cyst ; one case of incisional hernia following previous caesarean section. In this case along with the hernia repair, we did tubal ligation and excision. One case had an artificial vagina prepared by Shirodkar's method. Twenty-one cases had 275 mg. of PRM-TC daily for 3 days (total dosage 825 mg.). One case of infected broad ligament cyst and one case of artificial vagina had 2 injections totalling 550 mg. daily for 3 days (total dosage of 1650 mg.). Twelve cases had fever for one day, 8 cases had for two days and 3 cases had for 3 days and more postoperatively. While assessing our results in relation to rise in temperature the first 24 hours were excluded. Seventeen cases showed good rsponse and 6 cases behaved unsatisfactorily. Four cases had diarrhoea after the exhibition of the drug and one case had giddiness. Untoward symptoms in the mouth and allergic manifestations were absent. There was no change in blood pressure recording and the pulse rate.

Discussion

PRM-TC possesses certain advantages as compared with other antibiotics because of its immediate and constant level in the blood. It is the drug of choice in cases of fulminating sepsis. In various acute abdominal lesions with tendency for nausea and vomiting and following majority of the major operations especially done under general anaesthesia. Where it is difficult to administer any antibiotic by month the drug can be used advantageously. Even in cases of liver damage, where absorption of oral drugs is questionable, uncertain and delayed, this drug can be administered intravenously. As the solution of the compound is non-irritating and does not require large amount of fluid for dilution it can be given intravenously very rapidly either in the patient's home or in hospital. The drug is therefore, obviously popular with both institutional and domiciliary practice. In old patients with myocardial damage, diabetes mellitus or pyelonephritis, where large amount of fluid cannot be administered along with an antibiotic, this compound has a better place. It has been observed that any dosage above 275 mg. at a time is a waste, and hence it is economical. Because of its ease of manufacture (semi-synthesis) this drug can be prepared on a large scale.

This drug on the other hand should be used with great caution in cases of acute gastrointestinal disturbances, as there is fear of damage to the bowel wall. Many observers have complained of untoward symptoms like bitter taste in the mouth, diarrhoea, giddiness and allergic manifestations.

It is evident (Table 3) that this compound has been used in various systemic diseases affecting gastrointestinal, urinary, respiratory, biliary and central nervous systems [Bhattacharyya and Goswami (1960), Buenger *et al.* (1958), Singh (1960), Patel *et al.* (1960).] It has been tried extensively as a prophylactic and therapeutic agent in various surgical conditions (Fuchs and Kaemmerer, 1959 ; and Dimmling *et al.*, 1958). In the practice of obstetrics and gynaecology it has been used (Masanao and Zenjiro, 1959) as a

TABLE 3—SHOWING RESULTS OF PYRROLIDINO-METHYL TETRACYCLINE THERAPY AS OBTAINED BY VARIOUS AUTHORS

Authors	No. of cases	Types of cases	Response		Deaths
			Good %	Poor %	
Agarwal and Chatru (1960) ..	14	Gastrointestinal, urinary infections	86	14	2
Bhattacharyya and Goswami (1960) ..	21	Respiratory, urinary, gastrointestinal infections	100	—	—
Buenger *et al.* (1958)	328	Respiratory, urinary, biliary tract infections and others	66	34	3
assessed	198				
Dimmling *et al.* (1958)	58	Surgical	64	36	3
Fuchs and Kaemmerer (1959) ..	162	Gastrointestinal, urinary infections	—	—	9
Singh (1960)	3	Urinary infections	100	—	—
Masanao and Zenjiro (1959) ..	9	Obstetrics and gynaecological cases	78	22	—
Patel *et al.* (1960)	15	Respiratory and urinary infections	87	13	—
Hansen	6	Staphylococcic enterocolitis	66	34	2
Jhaveri (1960)	33	Emergency obstetrics and gynaecological operations	79	21	—

prophylactic and curative measure. Various authors have claimed good response in 64 per cent to 100 per cent of cases. The deaths recorded by some of them were attributed to the uncontrollable diseases.

In our series 79 per cent cases showed satisfactory response while in the remaining 21 per cent the drug was either ineffective or revealed untoward reactions.

SUMMARY

1. Thirty-three patients consisting of 10 obstetric and 23 gynaecological cases were given PRM-TC.

2. Good response was obtained in 9 obstetric cases and 17 gynaecological cases.

3. Response was poor in one obstetric case and 6 gynaecological cases.

4. Only one case had giddiness and 5 had diarrhoea for which administration of the drug had to be discontinued in them.

CONCLUSION

The drug can be recommended as a prophylactic and curative measure to combat various systemic infections. It is easy to prepare the solution, administer the same in a short time either in the hospital or at home. It saves the patient repeated pricks of intramuscular injections or constant disturbances because of repeated oral administration. Side reactions included only a few local and general untoward symptoms.

ACKNOWLEDGMENT

The author is grateful to Messrs. Hoechst Pharmaceuticals Private Limited, Bombay, for a liberal supply of the product.

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MANAGEMENT OF SPORADIC GOITRE

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Sporadic goitre presents anatomically as a diffuse or nodular thyroid swelling. Most commonly such patients have a euthyroid function. Sometimes hyperthyroid and rarely hypothyroid states are present. Carcinomatous change may appear in such goitres.

The aetiological factors of sporadic goitre have hitherto remained less well understood.

The sequential events in the target organ, i.e., thyroid gland, appear to be that the hypertrophy and hyperplasia of the acinar cells lead to the diffuse enlargement of the gland. Involution and retention of colloid lead to the formation of the nodules. Almost all diffusely enlarged glands become nodular with the passage of years (Greene, 1950). At any stage patient with such a goitre may assume hyperthyroid state or rarely become hypothyroid. Subsequent carcinomatous changes are less frequent. In order to rationalise the treatment of such a malady, it is very pertinent to critically evaluate the anatomical and functional status of the thyroid gland.

Clinical judgment of the individual case gives with greater accuracy the assessment of the case than various laboratory tests. Laboratory and tracer studies with radioactive iodine should supplement rather than supplant the clinical diagnosis (Keating *et al*, 1950).

Studies with RI_{131} so as to give complete profile of the thyroid function, i.e., trapping of iodine in the thyroid, rate of its conversion into circulating thyroxine and the end organ response, give laboratory data which is more precise and correlates well with the clinical diagnosis. In clinically border line cases, it may be considered as giving an accurate prediction of the true functional status (Wayne, 1954).

For the past two years we have followed a practice at little variance with the usual routine in the management of goitre.

This could be best taken up in the order of incidence of the various forms of disease as seen here. In the Endocrine Clinic of A.I.I.M.S., New Delhi, out of first 500 consultations, 137 were on patients with thyroid dysfunction. Analysis of such cases regarding their age, sex and the nature of thyroid dysfunction is given in Fig. 1.

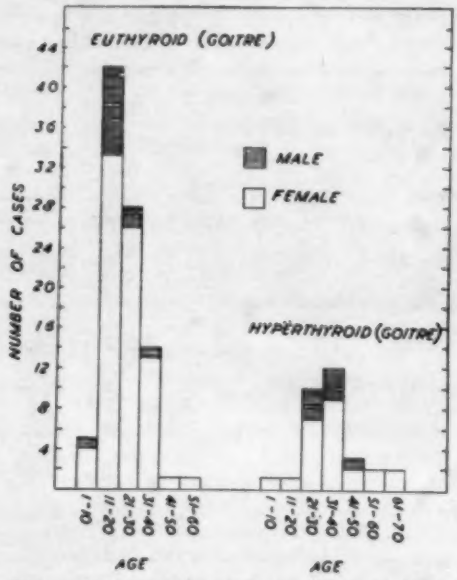

FIG. 1—SHOWING ANALYSIS OF CASES OF GOITRE ACCORDING TO AGE, SEX AND NATURE OF THYROID DYSFUNCTION

Majority of cases (63 cases) presented with diffuse goitre and euthyroid function. Females in second decade of life predominated in this group. Nodular goitre with euthyroid function was the next common (28 cases) in our series.

Hyperthyroidism was seen in (31 cases) 22·6 per cent of the total cases. Those with toxic diffuse goitre were 24, while 7 had toxic nodular goitre. Such cases were mostly in the 3rd or 4th decade, females predominated males in proportion of 4·5 to 1.

It would appear that hyperthyroid cases with exophthalmos have a different pathogenesis and they constituted (12 cases) 38·7 per cent of the total cases with thyrotoxicosis. Eight cases were with diffuse swelling of thyroid, 3 with nodular and 1 with recurrent thyrotoxicosis following subtotal thyroidectomy.

Two cases had goitre due to thyroiditis, both confirmed on histopathological examination. The remaining 13 cases had nongoitrous hypothyroidism.

TYPES OF GOITRE AND MANAGEMENT

GROUP I:

Euthyroid
- Diffuse
- Nodular
  - Single
  - Multiple

1. *Diffuse goitre.*—Thyroid extract 60 mg., or Na-L-Thyroxine 0·1 mg., two to three times a day, is prescribed in such cases. This exogenous thyroid meets the homeostatic needs of the individual and results in decrease of the secretion of the thyrotrophic hormone. This leads to involution of the hyperplastic tissue of the thyroid (Perlmutter *et al.*, 1952; Greer and Astwood, 1953). Diffuse hyperplastic goitre responds more readily and completely to thyroid than does nodular goitre. (Matovinovic and Ramalingaswami, 1958).

It takes a few months for the thyroid to become obviously smaller in size. Such patients visit the clinic monthly or so for a check-up. Pulse rate, body weight and if indicated, repeat B.M.R., serum cholesterol and P.B.I. estimations are carried on. The development of hypothyroidism ('Farquharson phenomenon'—Farquharson and Squirs, 1914) and hyperthyroidism in cases of simple goitre after withdrawal of thyroid treatment (Greer, 1951) was not seen in our patients.

The common practice of administration of iodine is not carried out. Iodine administration rarely causes dramatic shrinking of such a thyroid enlargement. On the contrary, it leads to involution with deposition of colloid and formation of adenomata in the thyroid gland. Iodine therapy may thus lead a diffuse form of goitre into a nodular one.

2. *Nodular goitre*—Nodular goitre of short duration may shrink when the patient is given desiccated thyroid medication. There is little chance of a nodular goitre coming to the attention of a patient or physician in early stages. It is only in the early stage that opportunity exists to reduce the functional hypertrophy or hyperplasia by inhibiting TSH activity with desiccated thyroid administration.

In our patients with a single or multinodular goitre the effect of thyroid therapy was less encouraging.

Surgery has been recommended here for cosmetic appearance, substernal extension and symptoms of compression. It is also undertaken when there is suspicion of malignant transformation of the goitre and in cases of thyrotoxicosis supervening on a nodular goitre.

GROUP II:

Hyperthyroid (Toxic)
- Toxic diffuse
- Toxic nodular
- Toxic (diffuse or nodular) with exophthalmos

Hyperthyroidism may be mild or severe.

If in the otherwise euthyroid nodular gland, the RI_{131} uptake was high, we encouraged surgical extirpation.

(1) *Diffuse swelling with a mild hyperfunction* responds to regular use of antithyroid drugs.

Neomercazole (carbimazole-2-carbethoxythio-1-methyl glyoxaline) 20-30 mg. per day has given us consistently good results. After the initial control of the symptoms and signs, 5-10 mg. of the drug was continued as maintenance dose therapy for 6-17 months. After discontinuation of antithyroid drug therapy the patient was carefully kept under observation for at least one year for any relapse. Patients in younger age group with mild thyrotoxicosis and small, diffusely enlarged thyroid gland respond well to this regime and go into prolonged remission.

No major side effects were encountered. Two patients developed drug rash and intense itching. In one case the addition of antihistaminics alleviated this condition, but in the other neomercazole had to be withdrawn. One patient had drug fever. Leucopenia may develop during treatment without accompanying symptoms and is not so hazardous as agranulocytosis which appears rapidly with signs of infection. (Simpson and Vanderlaan, 1961).

In childen with hyperfunctioning goitre, potassium perchlorate has been used, with initial dosage of 500-1000 mg. per day, and later with maintenance dose of 250-500 mg. per day. This drug is both effective and relatively free from side effects (Morgans and Trotter, 1954; Crooks and Wayne, 1960). It has the additional merit of being very cheap. In the dosage used, it has never led to a hypothyroid state. Clinical or subclinical hypofunction of thyroid has to be avoided in this age group as otherwise it may interfere with the somatic growth of the child.

2. *Toxic (nodular or diffuse) goitre and severe thyrotoxicosis*—In cases presenting with this clinical picture, antithyroid drug therapy was used initially and when a euthyroid status was established, surgery was undertaken. In our experience it is very difficult to predict the exact quantitative response to antithyroid drugs and the general rule that B.M.R. on the average falls by 1 per cent per day has not been borne out.

Serpasil, 0·25 mg., thrice daily has helped in the control of some cases of severe thyrotoxic state. It suppresses the discharge of the stimuli from the hypothalamas which are believed to be responsible for the release of excessive quantities of thyroid stimulating hormone by the anterior lobe of the pituitary (Wayne, 1960). Additional potassium perchlorate has also been considered rational and the response in certain severe thyro-

toxic subjects was most satisfactory in this combined regime.

With such antithyroid drug therapy the size of the gland and nodules were reduced in certain cases and the consistency of the gland became firm.

3. *Toxic (diffuse or nodular) goitre with exophthalmos*—Cases with eye signs, i.e. wide palpebral fissure, lid retraction, lid lag due to levator spasm were excluded from the true exophthalmos group.

Such cases were given antithyroid drugs or advised surgery on their individual merit. In all these cases, in addition to the above treatment, Na-*L*-thyroxine, 0·1-0·2 mg. per day was given This is to ensure that the thyroxine is always available to suppress the secretion of thyrotrophic hormone.

There has been no further deterioration in the eye condition of the patients attending our clinc. Additional administration of chlortride, 100 mg. once or twice weekly, was helpful in symptomatic relief. In one case exophthalmos had been gradually receding during the past one year probably due to a natural remission.

RADIOACTIVE IODINE :

Radioactive iodine therapy was recommended in elderly patients, also in those where major surgery was considered contra-indicated due to presence of a systemic disease or the refusal of the patient for surgery. Patients who tried antithyroid drugs earnestly but unsuccessfully were also treated by RI_{131}. Other cases recommended were those who had recurrence of thyrotoxic state after a partial thyroidectomy.

SURGERY :

Surgery has offered one more certain and rapid measure to achieve a successful result. Patients recommended for operation were carefully evaluated regarding any systemic contra-indication. Attempt was made to make them euthyroid or as near it as possible. This improvement in adequate preparation of the patients with the antithyroid drugs has now made the mortality rate negligible. (Cope, 1952). In large or retrosternal goitre, anteroposterior and lateral skiagrams of the neck were taken to ascertain the tracheal deviation and compression.

All patients had an endotracheal tube inserted after anaesthesia had been induced (Colcok, 1956) to secure an adequate airway during thyroidectomy.

The placement of scar in the neck is very significant from cosmetic point of view, hence we always made an incision that may be completely hidden by a string of beads or a closed collar shirt. For adequate exposure, careful dissection and high elevation of the superior skin flap well beyond the notch of the thyroid cartilage was uniformly done. The prethyroid muscles were routinely divided and retracted. Identification and secure ligation of both the thyroid arteries and middle thyroid vein avoided any serious haemorrhage at the operation table.

Recurrent laryngeal nerves were always identified and their relationship to inferior thyroid artery inspected, before placing any ligature on the latter (Lahey, 1947).

It has been customary to perform adequate subtotal thyroidectomy for diffuse involvements. Amount of thyroid tissue left has been roughly equivalent to the distal phalanx of the fifth finger i.e. about 2 g. (Johnson and Thompson, 1957). It has been shown that 0·8 to 1 g. of thyroid tissue is sufficient to maintain the euthyroid state (Szilagyi *et al.*, 1955). The trachea has always been left exposed by excision of the isthmus.

The wounds have had soft rubber drainage tubes for 48 to 78 hours. To avoid the heaviness of the scar, the sutures have been removed early, normally on 3rd and 4th day following operation.

Tracheal stenosis, oedema and softening, encountered in a case of large nodular goitre necessitated elective tracheotomy at the end of the operation (Warren, 1957).

Postoperatively two patients of marked nodular goitre and severe thyrotoxicosis who otherwise appeared well controlled on treatment, showed some evidences of partial tryroid crisis, i.e. marked restlessness, tachycardia and signs of incipient congestive heart failure. These patients responded very well to treatment with sodium iodide, intravenous glucose drip, chlorpromazine and digitalisation.

Three patients showed mild persistent thyrotoxicosis after surgery and are now being given neomercazole to bring them to a euthyroid state. No evidence of recurrent laryngeal nerve damage or parathyroid insufficiency was found in any case.

Haemorrhage, operative or otherwise, was not a problem. In general, the results of surgery were very satisfactory. There had been no serious complication or fatality.

We have recommended postoperative thyroid medication in the following two groups of patients :

(a) Children who had subtotal thyroidectomy, are given thyroid, 65 mg. per day for two years. This is being done as prophylaxis against the onset of a subclinical hypothyroid state which sometimes ensues after this surgery in children.

(b) Patients with nodular goitre were given this therapy for suppression of T.S.H. for sometime. In this way the hyperplasia of the thyroid remnant may be prevented and recurrence of nodular formation remain abated. (Matovinovic and Ramalingaswami, 1958).

Goitre associated with thyroiditis—Both these patients were females. They had previous history of pain in the lower anterior position of the neck. The goitres were smooth and firm. P.B.I. was high but the 24 hour RI_{131} uptake was below normal. Histopathological diagnosis was confirmed on an open thyroid biopsy.

These patients have been advised Na-L-thyroxine (ellioxine) 0·1 mg. t.d.s., and responded adequately. Addition of corticosteroids may be of benefit (Schultz, 1961) but we have not tried this.

Summary

An analysis of 137 cases of thyroid dysfunction has been presented. With reference to various diagnostic aids stress has been laid on clinical picture. Detailed outline of treatment, medical and surgical, with their respective indications in these cases of sporadic goitre has been discussed. Contraindications, complications and hazards of various modes of treatment have been highlighted for critical evaluation.

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PUBLIC HEALTH

A SCHICK TEST SURVEY IN LUCKNOW

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In recent times, there have been reports that the incidence of diphtheria in India has been on the increase. According to a recent World Health Organisation Press Release (1960) some 2,000 to 5,000 cases of diphtheria are admitted every year to hospitals in Calcutta and Bombay. Similar reports are not wanting in the other cities as well. In Bombay city alone, an average of 10 victims of diphtheria are admitted daily to the City Fever Hospital. At a cost of over Rs. 100 per patient, the Municipal Corporation of Bombay are spending well over Rs. 0·3 million a year on this disease (Banker, 1957). Recently, Singha and Taylor (1959) published their statistical studies on 'Diphtheria in Nagpur, 1951-1958'. They observed that diphtheria is a serious public health problem in the city of Nagpur ; about 390 cases occurred in 1957 and 505 cases in 1958. Of these, about 80 per cent of cases were in children under six years of age and 80 per cent of deaths were among children under four years of age. Studies of the registered deaths from diphtheria in Calcutta, Bombay and Madras between 1952 and 1958 showed that the death rate per mille from this disease varied from 0·04 in 1952 to 0·5 in 1958 (Bhattacharji, 1959). Even in some rural areas where surveys have been carried out, its incidence was found to be high. Bhattacharji *et al* (1960) found yearly morbidity and mortality rates of 1·35 and 0·06 per mille respectively in Singur (West Bengal) in 1958-59, a ten-fold increase in the disease since 1944 when Lal and Seal (1949) found a morbidity rate of 0·14 per mille.

It is apprehended, as seen above, that diphtheria might be another serious public health problem cropping up in India and that a country-wide immunisation campaign against this disease might be necessary. This is the content of a recent WHO press release already referred to. The health authorities in Delhi and Bombay have

already launched a programme of mass immunisation of the school-going children in their respective areas (Bhattacharji and Ghosh Hazra, 1955). As prophylaxis against diphtheria, whooping cough and tetanus amongst children in Calcutta and the neighbouring areas, immunisation of children with triple antigen has been arranged at the outdoor sections of the city hospitals in Calcutta since October 1960 on a payment of Rupee one for the full course of three injections at intervals of 4 to 6 weeks (*J. Indian M. A.*, 1960).

Before a mass immunisation programme against diphtheria is undertaken, it would be worthwhile to assess the magnitude of the problem. Statistics show that the death rate from this disease even in the most vulnerable age group does not exceed 1·0 per mille (Bhattacharji *et al*, 1955). In Bombay, during recent years, diphtheria has never accounted for more than 0·5 per cent of the total deaths in any year, while in Madras, the percentage of deaths, had been 0·10 per cent of the total deaths recorded in the city as a whole (Bhattacharji, 1959). These observations show that diphtheria is much less a problem as compared to some other communicable diseases like smallpox, tuberculosis and cholera.

To our mind, a mere study of the mortality and morbidity statistics alone would not be sufficient to assess the problem of diphtheria in the country. A more fruitful and pertinent approach would be to study also the immunity status of children in different parts of the country. We have in the Schick test a simple and valuable tool to determine the herd immunity of population in respect of diphtheria. But this test has not been sufficiently employed in this country on a mass scale as indicated by the limited number of Schick test surveys which have been carried out in India. Ghoshal and Mukerji (1953) carried out studies on this aspect in Calcutta among boys and girls between the ages 2 and 10 years. Fox *et al.* (1923), Rambo (1929), Das (1934), Lahiri (1952), and Mehta (1960) carried out similar studies in other parts of India.

The present study is an attempt on a small scale to determine the actual status of immunity to diphtheria among school children, pre-school children and infants, covering the age period 0—17 years, in Lucknow city and in the rural areas near Lucknow. The survey was conducted during May and August 1960.

Plan of Study

The study was initially planned to determine the immunity status of school-going children in the villages of the Rural Health Centre, Sarojini Nagar, by the Department of Social and Preventive Medicine, King George's Medical College, Lucknow. For this purpose four villages of the Rural Health Centre were taken up and 553 school-going children between the ages 6 and 17 were Schick-tested. Finding very few susceptibles among school-going children, the study was extended to determine the immunity status of children belonging to the lower age groups, i.e., infants and pre-school children. This was undertaken both in the Rural Health Centre, Sarojini Nagar and in the Lucknow city, so as to have comparable data for rural and urban areas respectively.

Material and Methods

The material used in the testing was obtained from the Haffkine Institute, Bombay, and consisted of lyophilised Schick test toxin and Schick test control supplied in separate ampoules.

The results were read between the 4th and the 7th day. Only one reading, that is the final reading could be taken, due to shortage of personnel and facilities.

A person showing a circumscribed red flush of at least 10 mm. in diameter was regarded as positive, i.e., susceptible to diphtheria ; a person showing no such reaction was regarded as negative, i.e., immune to diphtheria. The pseudo-positive reactions could not be recorded for reasons given above.

Findings

I. In the Rural Health Centre, Sarojini Nagar :

The findings of the Schick test survey among school-going children in the villages of the Rural Health Centre, Sarojini Nagar are given in Tables 1 and 2.

Table 1—Findings of Schick Test Survey among School-going Children in Rural Health Centre, Sarojini Nagar, Lucknow District (Village-wise)

Village	Distance (miles) from Lucknow City	Name of school	No. tested and read	Schick positive	
				No.	Per cent
Gouri	11	Primary School	75	—	—
Shantinagar	9	,,	112	1	0·8
Besa	8	,,	102	—	—
Banthra	15	,,	155	1	0·6
Banthra	15	Junior High School	109	2	1·8
Total	—	—	553	4	0·7

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TABLE 2—FINDINGS OF SCHICK TEST SURVEY AMONG SCHOOL-GOING CHILDREN IN RURAL HEALTH CENTRE, SAROJINI NAGAR (AGE-WISE)

Age group (years)	No. tested and read	Schick positive	
		No.	Per cent
Up to 5 ...	—	—	—
6 to 10 ...	298	1	0·3
11 to 15 ...	251	3	0·4
16 to 20 ...	4	—	—

Out of 553 school children who were Schick-tested only four were found to be positive reactors. In other words, the vast majority of school children (99·3 per cent) were found to be immune to diphtheria.

II. AMONG INFANTS AND PRE-SCHOOL CHILDREN IN LUCKNOW CITY AND SUBURBS :

The findings of the Schick test survey among infants and pre-school children in Lucknow city and suburbs are given in Table 3. The children of this group were drawn from the maternity and child health clinics and their sub-centres ; and the nursery and Montessori schools.

It will be seen from Table 3, that out of 223 infants and pre-school children 58 were Schick positive. It will be observed further that :

1. None of the infants below 6 months of age who were tested were Schick positive.

2. By the end of the first year, 43·7 per cent of the infants were Schick positive.

3. By the end of the second year, 50 per cent of the children were Schick positive.

4. After the third year of age, there was a fairly rapid decline in susceptibility.

TABLE 3—FINDINGS OF SCHICK TEST SURVEY AMONG INFANTS AND PRE-SCHOOL CHILDREN IN LUCKNOW CITY AND SUBURBS BY AGE

Age group	No. tested and read	Schick positive	
		No.	Per cent
Up to 6 months ...	21	—	—
Above 6 months and up to 1 year ...	16	7	43·7
Above 1 and up to 2 years ...	30	15	50·0
Above 2 and up to 3 years ...	24	8	33·3
Above 3 and up to 4 years ...	52	12	23·0
Above 4 and up to 5 years ...	80	16	20·0
Total ...	223	58	26·05

III. AMONG INFANTS AND PRE-SCHOOL CHILDREN IN THE RURAL HEATH CENTRE, SAROJINI NAGAR :

The findings of the Schick test survey among infants and pre-school children in the Rural Health Centre, Sarojini Nagar are given in Table 4.

It will be observed that :

1. None of the infants under 6 months of age tested and read were Schick positive.

2. By the end of the first year of age, 50 per cent of infants were found to be susceptible.

3. By the end of the second year of age, 37·5 per cent were found to be susceptible.

4. After the third year of age, there is a rapid decline in susceptibility to diphtheria.

TABLE 4—FINDINGS OF SCHICK TEST SURVEY AMONG INFANTS AND PRE-SCHOOL CHILDREN IN THE RURAL HEALTH CENTRE, SAROJINI NAGAR

Age group	No. tested and read	Schick positive	
		Number	Per cent
Up to 6 months ...	6	—	—
Above 6 months and up to 1 year ...	8	4	50·0
Above 1 and up to 2 years ...	16	6	37·5
Above 2 and up to 3 years ...	5	1	20·0
Above 3 and up to 4 years ...	6	1	16·6
Above 4 and up to 5 years ...	2	—	—
Total ...	43	12	27·9

IV. AMONG INFANTS AND PRE-SCHOOL CHILDREN—URBAN AND RURAL AREAS COMPARED :

The findings of the Schick test survey among infants and pre-school children in the urban and rural areas are set out in Table 5 for comparison.

It would appear that in the rural areas there is an early conversion to Schick negative reaction in all the age groups through subclinical infection. This aspect of the problem needs further exploration.

V. CONSOLIDATED STATEMENT OF SCHICK TEST SURVEY FINDINGS :

In the present study, Schick test was done on a total of 819 children covering the age period 0—17 years in both the urban and rural areas in and around Lucknow. The findings are classified according to age and are set out in Table 6.

TABLE 5—COMPARISON OF FINDINGS OF SCHICK TEST AMONG INFANTS AND PRE-SCHOOL CHILDREN IN URBAN AND RURAL AREAS

Age	Urban (Lucknow city and suburbs)		Rural (R.H.C. Sarojini Nagar)	
	No. tested	Per cent positive	No. tested	Per cent positive
Up to 6 months ...	21	—	6	—
Above 6 months and up to 1 year ...	16	43·7	8	50·0
Above 1 and up to 2 years	30	50·0	16	37·5
Above 2 and up to 3 years	24	33·3	5	20·0
Above 3 and up to 4 years	52	23·0	6	16·0
Above 4 and up to 5 years	80	20·0	2	—
Total ...	223	26·05	43	27·9

TABLE 6—CONSOLIDATED STATEMENT OF FINDINGS OF SCHICK TEST SURVEY IN THE URBAN AND RURAL AREAS OF LUCKNOW (AGE-WISE)

Age	No. tested and read	Schick test positive	
		Number	per cent
Age	27	—	—
Above 6 months and up to 1 year ...	24	11	45·4
Above 1 and up to 2 years	46	21	45·6
Above 2 and up to 3 years	29	9	31·03
Above 3 and up to 4 years	58	13	22·04
Above 4 and up to 5 years	82	16	19·5
Above 5 and up to 6 years	51	1	1·9
Above 6 and up to 7 years	60	—	—
Above 7 and up to 8 years	58	—	—
Above 8 and up to 9 years	47	—	—
Above 9 and up to 10 years	82	—	—
Above 10 and up to 15 years	251	3	1·1
Above 15 and up to 20 years	4	—	—
Total ...	819	74	9·03

VI. SCHICK TEST SURVEY FINDINGS BY SEX :

Some workers (Dudley, 1929) had found in their Schick test surveys that the susceptibility rates to diphtheria were higher in females than in males in the corresponding age groups. This phenomenon of sex difference in susceptibility has not been sufficiently explored nor explained. It is believed that the females acquire circulating antitoxin at a slower rate than the males at all ages. This hypothesis has been further extended so as to claim that the potentiality of responding to antigenic stimulus from diphtheria bacillus is greater in the average male than in the average female.

In the present study, it has also been our experience that there is a higher rate of Schick positive reactions among females (28·3 per cent) than in the males (24·1 per cent) in the age group 0-5 years. The findings in regard to sex difference in susceptibility are classified according to age and are given in Table 7.

It will be seen that during the third year of age the sex difference in susceptibility is even more marked—46·1 per cent of female children were susceptible to diphtheria as against 18·7 per cent of male children. This sex difference in susceptibility is quite striking and significant and needs further exploration.

TABLE 7—FINDINGS OF SCHICK TEST SURVEY IN THE URBAN AND RURAL AREAS OF LUCKNOW (SEX-WISE)

Age	MALES			FEMALES		
	No. tested	Positive		No. tested	Positive	
		No.	Per cent		No.	Per cent
Up to 6 months ...	15	—	—	12	—	—
Above 6 months and up to 1 year ...	14	6	42·8	10	5	50·0
Above 1 and up to 2 years	27	12	44·4	19	9	47·3
Above 2 and up to 3 years	16	3	18·7	13	6	46·1
Above 3 and up to 4 years	29	7	24·1	29	6	20·6
Above 4 and up to 5 years	52	10	19·2	30	6	20·0
Total ...	153	38	24·1	113	32	28·3

DISCUSSION

The present study reveals that in children over 5 years of age, the level of herd immunity is over 99 per cent. According to Greenberg (1955) a

herd immunity of at least 70 per cent is required to prevent the spread of the disease in a community. This has been corroborated by other workers (Powell, 1959) in England and North America. In this context, mass immunisation of children over 5 years of age in this part of the country, is not warranted. Reviews of active immunisation programmes in the western countries also indicate that immunisation of children of school age alone would not lower the incidence of the disease in any community (Bhattacharji, 1959).

Consequently, if diphtheria is to be reduced or controlled, the pre-school children below 5 years need to be protected. They are the vulnerable group in the population. Again, in the pre-school age period, the highest percentage of positive Schick reactors are found between the ages of 6 months and 3 years. After the age of 3 years, there is a rapid decline in susceptibility rates and a herd immunity of 70 per cent is reached by the end of the third year of age. Clearly then, if mass immunisation against diphtheria is to be undertaken, it should be between the ages of 6 months and 3 years, perferably in infancy after 6 months of age.

Is preliminary Schick test necessary?—Generally it is conceded that a preliminary Schick test is not necessary in the lower age groups, that is below 10 years of age. The following lines from Topley and Wilson (1955) are pertinent: "The desirability of a preliminary Schick test to find out whether inoculation is required is open to question. In a mass immunisation campaign, a preliminary Schick test is justified on only two conditions—firstly that a high proportion of children are Schick negative and secondly that inoculation is restricted to Schick positive reactors." Although there is no harm in immunising those who are Schick negative, it is our view that a poor country like India can ill afford to spend large sums of money in immunising those who are already immune. The cost of a single Schick test works out to be Rs. 0·25 nP. and the most of 3 cc. of PTAP (Glaxo) is Rs. 3·25 nP. and that of Triple Antigen (Glaxo) is Rs. 4·60 nP. To immunise even 50 per cent of the children in India will cost several millions of rupees. It is therefore our view that a preliminary screening of pre-school children, especially those over 3 years of age, by Schick testing would be a great saving of national expenditure. A more practical approach to introduce diphtheria immunisation in a large measure would be to make it freely available for the pre-school children who need it, in all the child welfare clinics and primary health centres for the present, than to launch a nation-wide immunisation programme.

There appears to be a need for further studies on some aspects of herd immunity in diphtheria. For example, it has not been sufficiently explored as to why females show a higher rate of susceptibility than males. Probably more studies are required to confirm this finding. Secondly, it will be observed from this study that children in rural areas are acquiring immunity earlier than children in the urban areas. Whether this is true in the other parts of the country is not known. Further studies in this regard hold promise. Another aspect which has not been sufficiently explored is how children are acquiring immunity at such a fast rate when the clinical cases have been so few. In other words, the circulation of the diphtheria organism in the community, its survival in the environment, the part it plays in causing mild and inapparent infections all need to be explored. This entails systematic bacteriological examination of the human herd and isolation of the organism. It is also believed that in the tropics, skin and eye infections by the diphtheria organism may provide opportunities for acquiring natural immunity. We have hardly any data available in this respect. Here is an open field for the surgeons and the bacteriologists to make studies on the extent of skin and eye infections by the diphtheria organism in this country. In conclusion, it would be worthwhile to undertake further studies on some of the lines indicated above, before undertaking a country-wide immunisation programme.

Summary

A Schick test survey was carried out in Lucknow city and in the Rural Health Centre, Sarojini Nagar near Lucknow for finding out the actual status of immunity to diphtheria among infants, pre-school children and school-going children. The survey was done on 819 children covering the age period 0-17 years during May and August 1960. Briefly stated, the findings are:

1. Maximum susceptibility to diphtheria was found between the ages of 6 months and 3 years.

2. There is rapid decline in susceptibility after the age of 3 years.

3. Practically there is no susceptibility among infants under 6 months and children over 5 years of age.

4. There is an early conversion to Schick negative reaction in the rural areas than in the urban areas.

5. There is higher rate of Schick positive reactions among females than among males.

6. The most desirable age for large scale immunisation against diphtheria appears to be be-

tween 6 months and 3 years, preferably in infancy (about 6 months of age).

A few suggestions have been given for the study of the problem of diphtheria in India.

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CASE NOTES

MALROTATION OF THE GUT

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Developmental abnormalities of the gut rarely constitute the main factor of subjective symptoms in adult life. It is equally difficult to appraise the significance of these abnormalities as predisposing causes of any acquired organic disease. There occurs such wide variations in the anatomical arrangement of the small intestine in otherwise normal people, that it becomes difficult to ascertain the factor constituting the anomaly.

Mall (1898) first described the embryonal rotation of the intestine, and Dott's (1923-24) account of the anomalies of intestinal rotation is well recognised now. During development the intestine rotates upon the superior mesenteric artery, using it as an axis, with the result that the ascending, distal or caudal limb of the primitive loop finally overlies the descending, proximal or cephalic limb. In other words, the primitive colon comes ventral to the small bowel. Hence the caecum and appendix come to lie to the right upper quadrant beneath the liver from the left abdominal position. After rotation there is a downward descent of the caecum until birth or soon after, when it occupies its adult position in the lower right quadrant.

Non-rotation of the intestine—The developmental defects of rotation are rather common in that part of the small intestine which is between the ampulla of Vater and midtransverse colon and has been derived from the primitive midgut. Huntington's experiments in 1903 for the study of non-rotation of the intestine had been mainly on the cat, because in this animal the intestine fails to rotate embryologically. In cases where there is a lack of rotation of colon the small intestine lies in the right abdomen and midline, while the colon remains in the left abdomen.

The failure of rotation is rare in the adult human being. In this anomaly, with the stimulus of peristalsis which follows feeding, volvulus neonatorum is likely to occur around the narrow duodeno-colic isthmus. The partly fixed duodenum is distorted and occluded by the volvulus, while the more mobile colon escapes, and the symptoms are those of duodenal obstruction arising shortly after birth, though sometimes this is delayed until adult life or even longer. Dott (1927) was the first worker in the correct clinical diagnosis of such a condition. The first reduction was undertaken by him and the credit goes to him for the first cure obtained in these cases and also for elucidation of the embryological tangle with its effects. Even if the infant with non-rotation does not develop volvulus, there remains a surgical difficulty in later life, for the colon remains left-sided, the small intestine more or less right-sided and if the symptoms of appendicitis arise, the signs are localised in the left instead of the right iliac fossa (Aird, 1958).

From the time of Mall's description of rotation of the gut embryologically until 1934, Gardner and Hart were able to sort out 132 cases of anomalies of rotation from the literature which included two cases studied by them. Cases of failure of rotation may not show any symptom even in adult life. But it is a well recognised fact that such an anomaly predisposes to the formation of volvulus with consequent obstruction. In the correction of such a condition, Spencer (1951) stressed that care should be taken not to overlook the peritoneal bands which are sometimes present and may maintain the obstruction after the volvulus has been reduced. Dixon and Deuterman (1936) reported a case of failure of rotation of the small intestine where the gut was wound round the superior mesenteric vessels. In such cases, as described by these authors, a common

mesentery was found for the right half of the colon and the small intestine. Charlsey and Richardson (1928) emphasised that mesenteric vessels are not usually compressed and strangulation, though it may occur, is exceptional. Occasionally cases of non-rotation of intestine are discovered at operation performed for acute appendicitis where symptoms and signs pointed the process in the left abdomen. In other cases, a roentgen study of the gut by the progress of meal may give suspicion of non-rotation. Non-rotation of the gut can go with good health and digestion, and should not be disturbed in the absence of symptoms of obstruction.

Case Report

C. K., female, aged 17, was admitted in the Professor of Medicine Unit on 20-5-1958 with complaints of diffuse pain in the abdomen of 6 to 7 years' duration, headache for 3 to 4 years, low grade pyrexia for 3 to 4 years and vague pains all over the body for 4 to 5 years.

For the last 6 to 7 years, the patient was having diffuse pain in the abdomen, more or less constant, of mild nature with no special localisation and no relation with meals. Occasionally the pain would increase in intensity with no obstructive features of the gut. There was no history of dysentery. Three years later, she started running temperature varying from 99 to 100°F which was present almost daily. Along with this she had headache and backache which was mild in intensity and was of constant nature.

The patient was seen in the V. J. Hospital for the first time in 1953 and was diagnosed to be suffering from tabes mesenterica because of suspicion of one or two small glands in the right iliac fossa. Straight skiagram of the chest, and erthyrocyte sedimentation rate were normal at that time. She was treated for chronic amoebiasis and giardiasis, because repeated examination of the stools revealed cysts of *E. histolytica* and *Giardia intestinalis*.

But low grade intermittent fever continued for which she was admitted in our unit for further investigations.

Past history and family history were non-contributory. Physical examination did not reveal any abnormality except for the temperature which was 100°F at the time of admission. The normal liver dullness on the right side and stomach note on the left side were present. No glands were detected in the right iliac fossa.

Investigations—Hb. 12 g. per cent. ; Total and differential counts were 3,200/c.mm, with polymorphs 48 per cent and lymphocytes 52 per cent.

Urine and stools revealed no abnormality.

Blood sedimentation rate was 50 mm./1st hour (Westergren). Gastric lavage was negative for acid-fast bacilli, by smear and concentration method.

Plain skiagrams of the abdomen and chest were normal. Barium metal study of the gastrointestinal tract revealed the following—Malrotation of gut so that the whole of the colon was lying on the left side and the small gut on the right side Fig. 1—A and B, *vide* Plate). Barium enema confirmed the findings of barium meal study of the gastrointestinal tract.

Electrocardiogram did not reveal any abnormality. There was no evidence of dextrocardia.

Comments

The patient was treated on antituberculous regime with streptomycin and isonex. Subsequent follow-up of the case showed good results.

We have presented a case of malrotation of the gut which is a rare anomaly in the adults and which is the first one of its kind from this institution. Our patient had helminthic protozoal infestation with giardiasis and chronic amoebiasis for which she was treated for a number of times. Along with this she was also having intestinal tuberculosis in the form of tabes mesenterica which was the main cause of her symptoms. She showed definite improvement with antituberculous treatment. Malrotation of the gut was demonstrated in the case by the radioscopic study of the barium progress in the gut, but such an examination failed to reveal any evidence of intestinal tuberculous lesions. This case is of radiological interest and curiosity and the evaluation of antituberculous therapy is at best a mere surmise.

Acknowledgment

I am grateful to Dr. M. L. Aggarwal, Professor of Radiology for carrying out the radiological investigations in this case. I am also thankful to Dr. R. P. Malhotra, Professor of Medicine, for allowing me to publish this paper.

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BENIGN METASTASISING GOITRE

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Neoplasms of the thyroid, which metastasise to the neighbouring tissues or glands, but yet have the histological appearance of a benign adenoma have been reported in the literature. These were called benign metastasising goitres or lateral aberrant thyroid tissues. The modern concept is that these swellings, though apparently benign, both histologically and clinically, are really low grade malignant lesions of the thyroid. The occurrence of two cases reported below, prompted the author to review the literature on the subject.

Swellings situated on the lateral aspect of the neck, having the histological picture of the thyroid gland have been reported in the literature as early as 1779. The histological picture of these swellings may be that of a normal thyroid gland, a follicular adenoma or an adenocarcinoma. These were initially called lateral aberrant thyroid nodules, based on the theory that they arose from the lateral thyroid analage, due to defective embryological displacements. Palpation of the thyroid gland in these cases did not reveal any palpable nodules. But, on closer studies, nodules were made out in these apparently normal thyroid glands. These were missed, as they were either too small or due to their being situated in the posterior aspect of the gland and were detected only at operation. In cases, where nodules were not palable, even during operation, serial sections of the gland usually revealed the presence of the nodule in some of the sections.

According to Willis (1953), lateral aberrant thyroid tumours are always metastatic extensions to the deep cervical lymph nodes, from a primary carcinoma in the homolateral lobe of the thyroid gland. Thus, the concept of lateral aberrant thyroid nodules has fallen into disfavour.

The concept of benign metastasising goitre is also changing. The long duration of these swellings, sometimes running into a decade or two, their histological appearances showing no evidence of malignancy in spite of careful search and the long period of follow-up without any mortality in some of these cases, made one often assume that these lesions were benign, in spite of their metastasising nature.

The site of these swellings may be anywhere in the neck, in the posterior triangle lateral to the carotid sheath, in the supraclavicular fossa, in the submaxillary triangle, in the mastoid area, in the retrosternal space or in the axilla. In the first case reported below, the swelling was situated in the right parotid area. This site has not been reported previously. In the second case, two swellings, one in the supraclavicular region and the second in the subdigastric region were present.

The size of the swellings varies, some of them are very large, when compared to the small primary nodule in the thyroid. Their rate of growth is slow; the morbidity and mortality rate is also low.

Histologically, the appearance of the metastasis may be that of normal thyroid tissue, benign thyroid adenoma or adenocarcinoma. In cases, showing the appearance of a benign adenoma, there may be signs of invasive growth into its capsule or blood vessel. These benign adenomas, showing signs of invasion of blood vessels or capsule, are classified by Lahey *et al.* (1940) as angio-invasive tumours.

Papillary cystadenomas of the thyroid may be benign or malignant. When benign, the tumour is encapsulated and histologically there is hyperplasia of the lining epithelium of a cystic adenoma. According to many authors, it is difficult to distinguish histologically, a papillary adenoma from a papillary adenocarcinoma. Only demonstrable invasion of the small veins in an adenoma or its capsule, as already stated, places it in the malignant category. A follow-up of these cases over a long period helps in establishing the benign nature of these adenomas.

As noted above, the concept of benign metastasising goitre has some points in its favour, both on histological and clinical grounds. In the cases reported below, even though malignancy was suspected clinically, the pathologist was not able to find any evidence of malignancy, in both the metastasis and the primary nodule, in spite of careful search. Thus we add two more cases to the list of these apparently benign metastasising goitres reported in the literature.

CASE REPORT

Case 1.—Mrs. M., Hindu, female, aged forty years, was admitted in Government General Hospital, Madras, in the surgical professorial unit under Dr. R. Mahadevan on 13-2-1957 for treatment of a swelling in the right cheek (Fig. 1) of two years' duration. It started insidiously two years previously and had gradually increased to its present size. Initially it was painless ; but during the two months prior to reporting for treatment, the patient had been experiencing occasional attacks of pain.

She also noticed for six years another small painless swelling in the right thyroid region,

FIG. 1—SHOWING SWELLING OF THE PAROTID REGION AND RIGHT LOBE OF THE THYROID (CASE 1)

which did not increase in size. She had no toxic or pressure symptoms. There were no tremors in the tongue or extremities.

The swelling in the right cheek was globular in shape with diffuse smooth edges ; its extent was from the ear-lobe to 1½" behind the right angle of the mouth, and from just above the zygoma to the lower border of the mandible. The borders appeared well-defined. The swelling was softish, firm and not tender. It was fixed to the deeper structures and the overlying skin was stretched but free of the swelling. The mucous membrane inside the cheek was excoriated due to the bulge of the swelling. The facial nerve was not affected. The tonsils were normal. The lymph nodes of the right submaxillary group and right upper posterior cervical group were moderately enlarged and soft.

The nodule in the right lobe of the thyroid was 1" in diameter and firm ; the rest of the thyroid appeared normal : the trachea was not deviated. The following investigations were carried out.

Urine—albumen and sugar absent. Hb 68 per cent. R.B.C. 3·4 mill./cmm. V.D.R.L.—Positive 1 : 16 dilutions. Blood group—A. Blood pressure 100/66 mm. of Hg. Skiagram of mandible—no bony lesion detected. Skiagram of chest—no evidence of secondaries.

The differential diagnosis was (a) a mixed parotid tumour turning malignant, and a co-existing adenoma of thyroid and (b) papillary cyst-adenocarcinoma of thyroid with secondary deposits in the parotid region. The first was thought more likely, because of the rarity of the secondaries in the parotid region.

Preoperatively in view of the positive V.D.R.L., she was given a course of antisyphilitic treatment, 2·4 mega units of P.A.M.

On 5-3-47, under endotracheal anaesthesia, the parotid swelling was explored with a view to preserve the facial nerve, if the tumour turned out to be benign.

A frozen section biopsy was therefore done initially. The pathology report was as follows : "Follicular adenoma thyroid ; picture is that of adenomatous pattern with eosin-stained material in the lumen probably colloid. Both macro- and microfollicles are seen, with occasional leucocytic infiltration locally. No papilliferous projections detected. The entire bit consists of adenomatous pattern, and no other tissue is included in the bit sent. Picture is not that of a mixed tumour. No evidence of malignancy seen" (Fig. 2, *vide* Plate).

This proved that it was a secondary deposit from the thyroid. Even so, it was thought best to excise the swelling, as the skin over it was already stretched. Accordingly, it was excised but the excision was very difficult, because of the increased vascularity of the swelling ; in spite of preliminary ligation of the external carotid artery on that side. Finally haemostasis was secured by gelfoam and packing with roller gauze. The wound got infected and took about a month to heal.

On 8-4-57, the thyroid was explored and the right lobe of the thyroid with its nodule was removed. It was a solitary nodule, well encapsulated and looked benign. The rest of the lobe was normal. The pathology report was colloid adenoma of thyroid. There was no evidence of malignancy (Fig. 3, *vide* Plate). The patient had an uneventful postoperative course.

She reported once after six months and was then doing well.

Case 2.—Mr. K., Hindu, male, aged forty years, was admitted in Government General Hospital in the author's unit on 10-9-60 for treatment of multiple swellings in the neck of three years' duration. The main swelling, in the thyroid region, was globular in shape, 2" in diameter, and was extending upto the suprasternal notch,

and corresponded to the right lobe of the thyroid. It was uniformly firm in consistency and had a finely granular surface. It was not tender or warm. The second swelling, situated in the right supraclavicular fossa, 2″ behind the sternomastoid muscle was oval in shape and 1″ × ½″ in size. It resembled an enlarged lymph gland and was of firm consistency. The third swelling, looking like an enlarged lymph gland, was situated in the subdigastric region on the right side, just anterior to the sternomastoid muscle. It was also firm and moved with deglutition. The trachea was deviated to the left side. No other glands were palpable: The cardiovascular and respiratory systems were normal. No toxic symptoms were present except microcytic anaemia.

Investigations revealed the following:

Pulse was 72 per minute, regular and of moderate volume and tension. Blood pressure was 90/60 mm. of Hg. Serum cholesterol was 172 mg. per cent. Total plasma protein was 5·9 g. per cent, albumen 3·2 g. per cent, globulin 2·7 g. per cent. R.B.C. count was 3·7 mill. per cmm. W.B.C. count 6000 per cmm. with polymorphs 67 per cent, lymphocytes 30 per cent and eosinophils 3 per cent. Blood group—O. B.M.R. could not be done as the patient was not cooperative.

The clinical diagnosis was papillary cystadenoma thyroid with secondary glands or carcinoma thyroid with secondary glands.

On 1-10-60, under endotracheal anaesthesia, the thyroid was approached by a collar incision (Surgeon—V. Sankaran). The strap muscles on the right side were cut. The trachea was found to be shifted to the right. The lower pole of the swelling was found to be retrosternal and was gently separated with the finger and brought out. Then, hemithyroidectomy was done in the usual manner. The other two swellings in the neck were removed separately (Fig. 4). No other glands were found enlarged. The left lobe of the thyroid was flattened out and could hardly be recognised. The incision was closed with drainage.

FIG. 4—SHOWING SPECIMENS REMOVED AT OPERATION (CASE 2)

The pathology report on the right lobe was adenoma of the thyroid, with no evidence of malignancy. The two swellings had also the appearance of adenoma of the thyroid with no evidence of lymphglandular structure or malignancy.

The patient was discharged on 8-10-60.

SUMMARY AND CONCLUSION

The points of interest in these two cases are:

1. The presence of a thyroid nodule which, on excision and microscopical examination, looked like a benign adenoma.

2. The co-existing swelling in the right parotid gland, on the other hand, on excision, proved to be a secondary deposit of thyroid tissue. While secondary deposits can occur anywhere in the body, a perusal of the literature suggests the parotid gland to be a rare site for such involvement.

3. In spite of the microscopic appearance, the condition must be considered as one of malignant thyroid nodule with secondary deposit in the parotid gland.

4. In a recent survey of malignant diseases of the salivary glands, only one case of secondary metastasis in the parotid gland was seen in a series of 78 malignant swellings in the parotid region (Lathrop, 1959). The primary in that case was a renal cell carcinoma. Secondary metastatic lesions in the parotid region are really rare, as seen from the above.

These facts lend support to the view, now finding increasing favour, that the so-called benign metastasising adenomas are really malignant secondary deposits, secondary to a clinically benign but nevertheless malignant thyroid nodule.

ACKNOWLEDGMENT

My thanks are due to Dr. R. Mahadevan, my then chief, and the then Dean, Government General Hospital, for permission to report these cases. My thanks are also due to the pathology department for help.

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MOUNTING CLINICAL EVIDENCE ON

CAPYNA COMPOUND

Dr. P. J. Haridas, M.B.,B.S., T.D.D., Superintendent, T.B. Sanatorium, Buldana, tried CAPYNA COMPOUND along with standard anti-tubercular therapy on 10 hospitalised cases which had been treated on an average for about two years with Streptomycin, I.N.H. and P.A.S. and which were not improving on that therapy.

Results: General condition improved in 100%, Temperature decrease 100%, E.S.R. decrease 100%, Weight increase 80%, Sputum conversion 43%, Radiological clearing 80%.

No toxic side-effects of any sort were noted during therapy.

The author concludes that CAPYNA COMPOUND has a definite place in the treatment of pulmonary tuberculosis, more so, in advanced cases which have become refractory to conventional anti-tubercular antibiotic and chemotherapy.

J.I.M.P., 1961,3,3684.

Dr. S. K. Das, M.B. (Cal.), T.D.D., F.C.C.P.(U.S.A.), Department of Tuberculosis & Chest Diseases, Calcutta Medical College, tried CAPYNA COMPOUND either alone or concurrently with the standard therapy in 34 cases of tuberculosis which had failed to respond to the standard therapy or which after some initial improvement had become partially resistant to that therapy or which could not tolerate any or all of the standard therapeutic agents.

16 cases of pulmonary tuberculosis which had failed to respond to standard therapy or which had become static after initial improvement on the therapy showed progressive improvement, when CAPYNA COMPOUND was added to therapy. The anti-pyretic effect was particularly gratifying.

Current Medical Practice, 1961, 3, 155.

Dr. V. B. Damle, M.D., D.P.H., "CAPYNA COMPOUND therapy was conspicuous by the total absence of untoward side-effects and the patient who got moderately severe to severe gastric upsets with I.N.H. and P.A.S., volunteered the information that not only was there no discomfort, but on the contrary there was a feeling of soothing comfort after the CAPYNA COMPOUND tablets. There was no diarrhoea and no vomiting."

J. I. M. P., 1960, 12, 3051.

Dr. M. R. Mistry, M.S., F.R.C.S., F.C.P.S., "I have used CAPYNA COMPOUND tablets for indoor and outdoor patients at St. George's Hospital, Bombay for tuberculosis of glandular origin with very good results. T. B. glands of neck or any where else respond well to CAPYNA COMPOUND."

The Indian Practitioner, 1960, 9, 835.

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HPF. 59-29

APPLICATION OF TISSUE THERAPY IN HAIR-DYE ALLERGY

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Tissue therapy has been tried extensively by Filatov (1955) in human beings specially in skin conditions. Lahiri (1958) has reviewed the possibilities of tissue therapy in human beings in India. Ray (1960) tried tissue therapy for the first time in various animal disease conditions. This communication is a detailed report of a case of hair dye allergy in which tissue therapy was instituted.

Case Report

A man aged about 40 years complained of severe itching in the head, right temporal region and right ear (Fig. 1, *vide* Plate). On enquiry it was found that the man had his hair dyed from a local saloon and since then the itching started He could neither sleep for a couple of days nor help himself from scratching. The constant scratching had resulted in severe ulcer formation followed by oozing.

On examination the whole area was found ulcerated. There was profuse oozing from the ulcers. A few lesions were also present on the cheek, leg and on the body.

Treatment and progress—Skin was prepared in the manner described by Ray (1960). It was taken out after 7 days and cut into small pieces. Excess of subcutaneous fat was discarded during the process. The finely cut tissue was then put in a 'Waring Blendor' and minced for six minutes with distilled water. The whole thing was transferred to a sterile flask and again put in a 'cooler' at 4°C. This was taken out at the end of 24 hours from the cooler and was put in a water bath running at a temperature between 70°—80°C. The flask was stirred constantly during beating in the water bath. The contents of the flask was filtered through a cotton-wool filter. The filtrate was then boiled for two minutes and filtered again through paper filter. This final filtrate was put in 2 ml. ampoules which were sealed and autoclaved at 120°C. for one hour. Ampoules were stored in a cool dark place. 2 c.c. of the extract was given daily subcutaneously in the gluteal region for 10 days.

Oozing stopped after 48 hours, and scab formation started. Itching was still present but its severity had diminished. Swollen ear lobule was assuming normal contour. On the 4th day the patient complained of dryness in the affected regions and was advised to put some bland oil like olive oil. The lesions on the leg and body also disappeared and skin appeared normal. After the seventh injection the patient still complained of itching but said it was getting milder every day. The skin condition also improved (Fig. 2, *vide* Plate). The patient was advised to use pure cocoanut oil for the hair and olive oil for the skin. After the tenth injection he was discharged with instructions not to use any irritant oil either for hair or for the skin.

The patient came back after the 14th day with recurrence of the condition, but there was less oozing and more itching. On enquiry he admitted that he got his hair dyed again in a saloon. Another course of 10 injections was given and the patient improved during the course. Itching sensation disappeared completely after this second course of injection.

Comments

Tissue therapy was for the first time used in a case of allergic dermatitis resulting from commercial hair dye. A remarkable feature of this therapy was noticed with two injections, when the moist oozing lesions dried up and scab formation commenced. The lesions in the other parts of the body also dried up 48 hours after the treatment was started. The skin looked normal after the seventh injection and oedematous swelling in the ear lobe disappeared. Lesions in the region of the head had disappeared before the expiry of the course of ten injections. That it was an eczema due to hair dye was evidenced from the fact that the patient came again after the 14th day with recurrence of the same condition and with the same history.

'Biogenic stimulator' as the name given by Filatov (*loc. cit.*) is still open for investigation by scientific workers. There is no doubt that some factor or factors are present in an extract of tissue treated in a particular manner which boost up the body defence mechanism. The method may be helpful in the treatment of a variety of human skin conditions.

Acknowledgment

The authors are indebted to Dr. A. Sinha of Chittaranjan Cancer Hospital who administered the course of injections and offered valuable suggestions.

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JOURNAL OF THE
INDIAN MEDICAL ASSOCIATION

CALCUTTA, NOVEMBER 16, 1961

VESICOVAGINAL FISTULA

Prevention, treatment and after-care of a vesicovaginal fistula, the commonest of all urinary fistulae, is a pressing problem in our country. The great majority of these fistulae are caused by pressure necrosis of the soft parts during obstructed labour or as a result of unskilled instrumental delivery. This condition can certainly be prevented. In the more advanced countries urinary fistulae resulting from obstructed labour are now very rare. It is time for us in India to make an all out effort to prevent the occurrence of these fistulae. Wet all day and night, emitting offensive urinous odour, shunned by society and even close relations and often deserted by the husband, these women lead a very miserable life indeed.

The repair of a vesicovaginal fistula is one of the most difficult gynaecological operations. It requires great patience, careful attention to details and good nursing care during the post-operative period. In spite of every care quite a few fail to heal at the first attempt and some are cured only after 3 or 4 repair operations and this discourages many gynaecologists from taking up these cases. Some of the fistulae are irreparable and uretero-intestinal anastomosis has to be resorted to with its consequent danger of pyelitis, co-existing pyelonephritis and/or uraemia. A few are complicated, there being a rectovaginal fistula and this makes surgical repair still more difficult.

Prevention depends on proper antenatal supervision of the pregnant woman so that abnormal presentation, disproportion or any other condition which may cause obstructed labour can be detected early and corrected in time or preparation made to deal with the same during labour. Good obstetric care will go a long way in not only preventing urinary fistulae but will also help to prevent other gynaecological conditions like prolapse, chronic cervicitis, etc., which result from labour.

As a result of a shortage of trained personnel, dearth of beds in hospitals, poor economic condition, poor means of communication, ignorance and various superstitious beliefs amongst the women, many confinements are still conducted by untrained *dais*. These women are unable to recognise abnormal labour early enough and even when they do recognise they are unable to deal with it. It is, therefore necessary to give some training in the method of antenatal and natal examination and in the conduct of labour to the younger group of untrained midwives and make the older ones retire, if possible.

At present medical students do not devote sufficient time to the study of obstetrics, most of their time is spent in that of medicine and surgery, as their main aim is to get through their final examination. This is only natural, besides, it is a fact that practical knowledge of any subject is obtained during the time when they work in the wards after graduation. Most of the medical graduates work as general practitioners and they are consulted by midwives in labour cases, particularly when there is delay during labour. Therefore, it is essential for every medical graduate to have good practical knowledge in obstetrics. For this it is essential to make it compulsory for every student to work in an obstetric unit for 3 months after graduation. It is also necessary to arrange refresher courses for the benefit of general practitioners and other doctors working in hospitals in rural areas. There should be special arrangements for these postgraduates to live in the obstetric unit so that they are able to attend all abnormal cases.

The programme of training of midwives should be intensified so that during the next few years every village can have a sufficient number of midwives. The general public should be educated by all means at the disposal of the Government with regard to the importance of regular antenatal care and proper conduct of labour by trained personnel.

After collecting all facts about the management of labour in every case of urinary fistula following child birth, a retrospective study should be held as an educational seminar with the medical profession, the students and the persons concerned with the conduct of labour in the particular case. This will have a great effect in improving obstetric care and help to reduce or completely stamp out the occurrence of these fistulae as a result of labour.

CURRENT MEDICAL LITERATURE

Further Experience with Guanethidine

LEISHMAN, A. W. D., MATTHEWS, H. L. AND SMITH, A. J. (*Lancet*, **2**: 4, 1961) from the Royal Infirmary, Sheffield, write:

The results of twenty months' observation of hypertensive patients continuously treated with guanethidine in the Infirmary are reported.

Of the original 114 patients who started treatment 6 have died and 8 have discontinued the drug. Of the remaining 100 patients the blood-pressure is considered well controlled in 71 and moderately well controlled in 18. In 11 cases the response has been poor.

Complications have been common, and attention is especially drawn to the association of fluid retention and temporary loss of blood-pressure control. The need to distinguish this from true drug tolerance is emphasised.

True drug tolerance has occurred in 20 per cent of the patients, but except in 3 cases this has been easily overcome by a small and usually single increase in dose. It has been exceptional for drug tolerance to interfere seriously with treatment.

Guanethidine is an effective hypotensive drug which is suitable for long-term treatment of patients with moderate or severe hypertension. If treatment is conducted with care, side-effects of the drug, although common, can be reduced to an acceptable level.

Antithyroid Drugs in Treatment of Hyperthyroidism

MCCLINTOCK, J. C., GASSNER, F. X., BIGELOW, N. AND BAKER, W. A. (*Surg. Gynec. & Obst.*, **112**: 653, 1961) write as follows:

The clinical experience with antithyroid drugs involving 843 patients and under the direction of one physician is presented. All antithyroid agents were associated with toxic reactions. Reactions occurring during 'itrumil' therapy were less frequent than those observed in patients given thiouracil, propylthiouracil, and tapazole. Measurements of thyroid gland acinar cell heights indicate that itrumil produces good involution which is borne out by production of less friable and less vascular thyroid tissue on which to operate. The authors emphasise this feature as being of great importance to the surgeon. Experimental studies confirm that the compound has excellent antithyroid properties which are different in many respects from other drugs because of low goitrogenicity.

A Freeze-dried Vaccine from Isoniazid-resistant B.C.G.

GAISFORD, W. AND GRIFFITHS, M. I. (*Brit. M. J.*, **1**: 1500, 1961) from the Department of Child Health, University of Manchester, write:

The tuberculin sensitivity produced by a normal freeze-dried B.C.G. vaccine in newborn infants is seriously impaired when isoniazid is administered concurrently. Isoniazid-resistant vaccine, on the other hand, produces satisfactory tuberculin conversion even when isoniazid is prescribed in doses of 10 mg./lb./day (22 mg./kg./day) This vaccine is more antigenic than the ordinary freeze-dried vaccine, with which it was compared; it caused no complications, and the resultant allergy at one year and, in the few tested thus far, at two years is as satisfactory as with the routine vaccines. The concurrent administration of isoniazid had no evident effect on the conversion rate, and the vaccine may therefore be recommended for use in appropriate circumstances.

Differentiation between Thyroid and Parathyroid Causes of Hypercalcaemia

BORTZ, W., EISENBERG, E., BOWERS, C. Y. AND PONT, M. (*Ann. Int. Med.*, **54**: 610, 1961) from the Department of Medicine, University of California School of Medicine, San Francisco; Charity Hospital, New Orleans, Louisiana; and Fort Miley Veterans Administration Hospital, San Francisco, California, write:

To evaluate the hypercalcaemia sometimes associated with thyrotoxicosis, the percentage of tubular reabsorption of phosphate was determined in 27 thyrotoxic patients. This was done by two-hour urine collections at Charity Hospital, New Orleans, and by a 12-hour overnight collection at the University of California Medical Centre.

The tubular reabsorption of phosphate was normal or high in 24 of the 27 patients. Nine patients had hypercalcaemia, and among these were the three whose tubular reabsorption of phosphate was low. In two with extremely low values for tubular reabsorption of phosphate (51 per cent and 50 per cent), hyperparathyroidism was diagnosed pre-operatively, and both patients had parathyroid adenomas. The third patient had a borderline low tubular reabsorption of phosphate of 76 per cent, and after therapy for thyrotoxicosis his serum calcium level and tubular reabsorption of phosphate were normal.

Administration of prednisone to one thyrotoxic patient with hypercalcaemia and uraemia resulted in normal values for serum calcium and creatinine.

Renal Glomerular and Vascular Lesions in Prediabetes and in Diabetes Mellitus

DAVSOG, R. JR., DOBSON, H. L., BRENNAN, J. C. (*Ann. Int. Med.*, **54**: 672, 1961) from the Departments of Medicine and Pathology, Baylor University College of Medicine and Jefferson Davis Hospital, Houston, Texas, from renal biopsy study of renal glomerular, and vascular lesions in prediabetes and in diabetes mellitus observe:

This study suggests that diabetic nephropathy seems to be virtually inescapable, once a diagnosis of diabetes mellitus is made either in a prediabetic, latent diabetic, or overt diabetic state. The study has shown that severe renal glomerular and vascular changes can occur in prediabetics and early diabetics and, by contrast, that minimal lesions may be present in poorly controlled diabetes of long duration.

With the above information it is postulated that the nephropathy and the carbohydrate defect of diabetes mellitus are independent of each other, but evolve from the same basic metabolic abnormality.

Diabetes Insipidus vs. Compulsive Polydipsia

DIES, F., RANGEL, S. AND RIVERA, A. (*Ann. Int. Med.*, **54**: 710, 1961) from the Department of Biochemistry and the Metabolic Unit, Instituto Nacional de la Nutricion, in dealing with the differential diagnosis between diabetes insipidus and compulsive polydipsia observe:

Four patients with polyuria and polydipsia were studied in order to make a differential diagnosis between diabetes insipidus and primary functional polydipsia. Several of the tests recommended for such cases were performed and the results were analysed critically. It was concluded that the most definitive test consists of administering vasopressin intravenously immediately after a period of dehydration. If the pitressin produces a more concentrated urine than the dehydration, diabetes insipidus is diagnosed; if not, compulsive polydipsia is diagnosed. It is felt that diabetes insipidus and psychogenic polydipsia are related in many ways, but that they differ in prognosis; hence it is important to differentiate between them.

Acute Glomerulonephritis in Aged Patients

SAMIY, A. H., FIELD, R. A. AND MERRILL, J. P. (*Ann. Int. Med.*, **54**: 603, 1961) from the Medical Service, Peter Bent Brigham Hospital and Massachusetts General Hospital, and Department of Medicine, Harvard Medical School, in reporting 7 cases aged over 60 years with acute glomerulonephritis observe:

Seven cases of acute glomerulonephritis in elderly patients, ranging between 62 and 81 years of age, are present. The most common presenting symptoms were dyspnoea and oedema, and several patients showed pulmonary oedema. Because of the atypical clinical features and the patients' ages an initial correct diagnosis of acute glomerulonephritis was considered in only one case. It is emphasised that acute glomerulonephritis is not limited to any age group. It occurs in older adults and not infrequently in patients 60 years of age or older.

Syndrome of Mitral Incompetence, Myocarditis, and Pulmonary Hypertension in Nigeria

ABRAHAMS, D. AND BRIGDEN, W. (*Brit. M. J.*, **2**: 134, 1961) from cardiac department, the London Hospital; and National Heart Hospital, London, report the results of investigation of the clinical, radiological, and electrocardiographic features of 50 Nigerian patients who presented with heart failure due to mitral incompetence and pulmonary hypertension. Necropsy examination of 13 cases showed presence of severe left ventricular myocardial disease and mitral-valve disease. Most hearts showed some degree of macroscopic endomyocardial fibrosis, and histological examination revealed either a diffuse non-specific inflammatory reaction or a myocarditis with Aschoff nodules which was indistinguishable from rheumatic carditis.

It is suggested that the peculiar pattern of this disease, comprising left ventricular myopathy, mitral valvulitis, and pulmonary hypertension, may be determined not only by its primary cause, but also by the background of chronic anaemia, protein malnutrition, and chronic infestation which is present in these patients and in the population from which they are drawn.

Serum Cholesterol and Atherosclerosis in Man

MATHUR, K. S., PATNEY, N. L., KUMAR V. AND SHARMA, R. D. (*Circulation*, **23**: 847, 1961) from the cardiovascular research unit, department of medicine, Sarojini Naidu Medical College, Agra, summarised their findings as follows:

Two hundred cases were selected from medicolegal autopsies for a study of the relationship of serum cholesterol to the amount and severity of atherosclerosis in the aorta and the coronary and cerebral arteries. A preliminary study of cholesterol before and after death in 20 cases showed a close parallel between the two when the sample of blood was taken within 16 hours of death.

The mean serum total cholesterol showed a tendency to rise from 122 mg. per cent ± 16 in the first decade to 176 mg. per cent ± 28 in the fifth decade. A statistically significant correlation was found between serum total cholesterol levels and age up to the fifth decade.

No correlation could be observed between the serum cholesterol level and the amount and severity of atherosclerosis in the arteries. When all the cases were divided into arbitrary groups according to the amount of atherosclerosis, a rise in the levels of mean serum total cholesterol was seen in the first six successive groups of aortic atherosclerosis. But when age was excluded from the correlation between atherosclerosis and serum cholesterol, the interrelationship between the two was found to be statistically insignificant.

Arterial Pressure and Exertional Angina Pectoris in Hypertensive Patients

GEORGOPOULOS, A. J., SONES, F. M. JR. AND PAGE, I. H. (*Circulation*, **23**: 892, 1961) from the research division and the department of cardiology of the Cleveland Clinic Foundation and The Frank E. Bunts Educational Institute, report as follows:

Seven hypertensive patients, five with coronary arterial disease and two with normal coronary arteries, with exertional angina pectoris and left ventricular hypertrophy were subjected to exercise in the sitting and supine position.

The five patients with coronary arterial disease developed, during exercise in both positions, striking arterial pressure elevation followed by angina pectoris and electrocardiographic changes. When the pressor response to exercise was eliminated by intravenous sodium nitroprusside, these were prevented.

In the two patients with normal coronary arteries who had orthostatic and exertional hypotension secondary to antihypertensive treatment, exercise in the sitting position caused intense hypotension followed by angina pectoris and electrocardiographic changes. In contrast, exercise in the supine posiition, which caused only minimal pressure changes, was not followed by angina pectoris.

The authors concluded that in hypertensive patients with coronary arterial disease, further elevation of arte-

rial pressure during exercise is an important factor in precipitating angina pectoris by increasing cardiac work. In hypertensive patients with normal coronary arteries and exertional hypotension secondary to anti-hypertensive treatment, marked lowering of arterial pressure during exercise is of importance in producing angina pectoris, probably by reduction of perfusion pressure and coronary flow relative to hypertrophied left ventricle.

Prognosis in Bell's Palsy

MATTHEWS, W. B. (*Brit. M. J.*, **2**: 215, 1961) from Derbyshire Royal Infirmary, observes that the prognosis for complete recovery from Bell's palsy seen within six days of the onset was found to be no higher than 65 per cent. The relatively bad prognostic significance of advancing years, a complete palsy, and herpes zoster was confirmed. The effect of selection on the prognosis is discussed, and the necessity for precisely matched control series in the assessment of treatment is emphasised.

Mitral Valvotomy

FRASER, K. AND KERR, I. F. (*Brit. M. J.*, **2**: 339, 1961) from The Western Infirmary, Glasgow, review the case records of 221 mitral valvotomies. All cases except two have been traced, seen, and assessed. Two different operative techniques provided two series of cases—the finger or finger/knife technique for the first 150 cases, the dilator by the transventricular route for the rest.

The final valve size was 3·5 cm. or more in 98·6 per cent of cases where the dilator had been employed. Where the finger or finger/knife technique had been used only 16·6 per cent had a final valve size of 3·5 cm. or more.

The operative mortality was lower in the dilator series. Death due to embolus was three times more common in the finger/knife series. The lowered incidence of embolus is due to the dilator entering the valve orifice from below and thus causing less disturbance of the calcification, which, when present, is normally found on the superior aspect of the valve leaflets or fused commissures.

Early results are compared with late results in the first 100 patients. Results are reviewed for the series as a whole. Although it is perhaps early to be certain of the late results in cases where the dilator has been used, it is encouraging that, so far, all survivors from this operation are in the 'good' to 'excellent' category. The influence of auricular fibrillation on the operative mortality and prognosis is discussed.

Adrenocortical Steroids in Intermittent Heart-Block

PAY, B. W. AND WAVERLEY, V. (*Brit. M. J.*, **2**: 139, 1961) from Royal Berkshire Hospital, Reading, report as follows:

Six patients with heart-block and Stokes-Adams attacks have been treated with prednisolone after the failure of conventional measures, and in all six the attacks ceased within 48 hours. Subsequently all patients have remained free from episodes of syncope for a long period.

Similar results have been reported by others, and treatment with adrenocortical steroids appears often to be useful when sympathomimetic drugs are ineffective. In general, a favourable response is most likely when Stokes-Adams attacks occur in a patient with atrioventricular block which is unstable. In such cases a return to normal rhythm can be hoped for. Once complete heart-block is established, the rhythm is usually unaffected by steroid treatment, but if it is complicated by syncopal attacks from ventricular standstill, steroid therapy may still relieve them. Prolonged maintenance treatment is suggested in patients with chronic ischaemic heart disease.

Hyperbilirubinaemia and Perceptive Deafness

FISCH, L. AND NORMAN, A. P. (*Brit. M. J.*, **2**: 142, 1961) from Queen Charlotte's Maternity Hospital, report:

Fifty children who were jaundiced at birth, and who had regular daily estimations of total bile pigments and conjugated bilirubin, had their hearing fully tested later, and in six cases a typical perceptive partial deafness was confirmed.

The results showed that perceptive deafness of a characteristic type may occur in jaundiced babies in the absence of athetoid cerebral palsy and at a bilirubin concentration lower than generally regarded as dangerous.

The findings suggest, however, that hyperbilirubinaemia may not have been the sole factor in these cases, and that overdosage within vitamin-K may have been partly responsible, although there may have existed some other, so far unsuspected, circumstances which contributed to the damage resulting in deafness.

Further studies will be necessary to find out whether the safety margin of bilirubin levels, applicable to the development of kernicterus and athetoid cerebral palsy, does in fact apply to development of perceptive deafness.

Treatment of Tropical Eosinophilia with Diethylcarbamazine Citrate in Children (Single Dose Oral Therapy)

BHARGAVA, H. S. AND KHANDELWAL, M. K. (*Indian J. Child Health*, **10**: 101, 1961) observe as follows:

Treatment with single dose (oral) therapy in tropical eosinophilia is desirable. After an initial successful trial with single oral dose therapy (16 mg./kg. body weight) in 30 adults suffering from tropical eosinophilia, a similar trial was undertaken in children in Nagpur. The criteria used in selection of patients for trial were: (i) symptoms and signs suggestive of tropical eosinophilia, (ii) an absolute eosinophil count of 2,000 per c.mm. or more, and (iii) exclusion of other conditions associated with a high eosinophil count.

20 cases were studied—16 boys and 4 girls in ages from 3—12 years. The duration of illness varied from less than 7 days to a maximum of 2 years. The total leucocyte count varied from 8,000 to 28,000 per c.mm. and the absolute eosinophil count from 2,000 to 20,000.

Diethylcarbamazine syrup in a single dose of 16 mg./kg. body weight was given orally half an hour after evening meals. The drug was well tolerated and no side effects were noted in any case. The value of diethylcarbamazine in the treatment of tropical eosinophilia has been well established. 15 patients got complete relief in 7-12 days. Only one patient showed none.

CURRENT TOPIC

THE PAST, PRESENT AND FUTURE OF THE GENERAL PRACTITIONERS IN INDIA*

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The provision of high quality of medical care in any modern State depends, first, on improvements in medical education and second upon the proper organisation of medical practice. The physician must be first trained to render adequate service. Then his practice must be organised so as to make it possible for him to realise his potential abilities in maximum actual services. A physician with excellent training may still render inadequate service if he is obliged to work in isolation, without opportunities for continued education and when he is paid for curing illness rather than preventing it. We have discussed the education and training of the general practitioner. It now remains to discuss the Past, Present and Future of the general practitioner.

The present status of the general practitioner differs very widely from that which he held a few decades ago. It is interesting to trace the evolution of the present day general practitioner from the private practitioner of those decades. The private practitioner started as a family physician. The capable and conscientous family physician of those decades occupied a unique and important position in the field of medical practice. He assumed responsibility for the members of the family in illness and injury and safeguarded them from unnecessary or meddlesome medical and surgical treatment. Besides he acted as the friend, philosopher and guide to the head of the family. His status did not entirely depend on his professional qualifications; whatever respect he commanded was due to the fact that the patients credited him with nature's triumphs in the case of self-limiting diseases and to the patients' imperative psychological need to have faith in those to whom they entrusted their lives. As long as diagnosis of diseases was a matter of experience or intuition and treatment was a matter of tradition and rule of the thumb, his position was unassailed.

The phenomenal advances made in medicine, particularly in the field of diagnosis, called for a greater skill and knowledge than the family physician possessed. Besides in comparison with the great advances by modern science and its spectacular achievements in the field of technology, the advances made in medicine were insignificant. Physicians had to fall back upon the Hippocratic tradition of "wait and see" what nature could accomplish. For these reasons the stock of medicine slumped badly and the profession began to lose its prestige.

Until a century ago medical technology was simple and the contents of medicine could be assimilated in a few years' study. In fact the private practitioners of those decades were mostly licentiates or apothecaries. The methods of examination were uncomplicated and required only a few instruments such as the stethoscope. Treatments were mostly empirical and surgery was limited to the treatment of wounds, fractures and dislocations and to a relatively smaller number of classical operations. The private practitioner of those decades had no difficulty in gaining a proficiency in these procedures.

During the last fifty years medicine has become very scientific, very technical, highly specialised and very effective. For a period skill in diagnosis far outstripped the knowledge of therapeutic and preventive measures. Within recent years, however, therapy and prevention has been catching up diagnosis. Equipped with a knowledge of the exact causes of several diseases, physicians have been increasingly able to recognise the earlier stages of such diseases. Primarily through the scientific contributions of clinical medicine, clinical pathology, medical bacteriology and more recently the science of nutrition and endocrinology, the medical profession has risen high in public esteem. A new hope has come to the profession and a new pride, as medical sciences aided specially by developments in chemistry and physics, enable the physician, not merely to comfort the patient and alleviate pain, but to effect the cure of many diseases and the prevention of many others. Instead of the therapeutic nihilism that was evident in the beginning of the century there has ensued a reign of therapeutic abundance. All these discoveries have enlarged the power of the physician and expanded his horizons of service. The private practitioner, with his services confined to the family has, by the advances of science and medicine in particular, become the general practitioner with his sphere of service widened to the greater family of the society of which he is an important member.

With the advance of medical technology and the invention of special instruments for specific purposes, medicine became very technical and very specialised. These advances have made the advent of specialists a necessity to handle these complicate instruments and interpret the results of their various procedures. Thus specialisation in medical practice, the necessary corollary of the development in medical science and technology, has become one of the marked characteristics of modern medicine. It was feared, that as a result of the mounting importance of specialisation, general medical practice will receive a severe set back. Contrary to the fears of the early critics of specialisation, the general practitioners have not been eclipsed by the development of the specialists. Their survival in spite of the pessimistic forebodings as to their future, is, in itself, a proof that their existence is vital to modern medical practice. They have three important roles to play in modern medical organisation.

1. Medicine consists of two well recognised branches of activity, viz., the curative and the progressive. The general practitioner, though he is mostly concerned with curative medicine, must also possess a clear idea of the advances made in scientific medicine and must be able to apply this knowledge in his daily practice. Though

* Dr. P. Kutumbiah Endowment Lecture II of Andhra University.

he may not indulge in progressive medicine, he must be in vital contact with all the knowledge which it has made available for him. "Between the department of research and practice there is needed a mediating system; a technical school continually to coordinate the growing principles of the laboratory with the accumulating contingencies of practice. The busy practitioner cannot be a master or even a disciple of these several departments of sciences, yet he must be so instructed in the broadest principle of them that he shall be in a position to recognise their application to practice and apply them to his own industry and foresee wider and wider occasions for such applications. The isolated academic worker, as well as the practitioner, loses by this isolation; he loses the spontaneous outcrop of problems and crucial instances which so often spring up in practice but fail to show themselves in the laboratory. So complete and mischievous, however, has been the barrier between research and the industry of medicine that a reaction from "laboratorism" to symptomatology has set in, because there is no intermediate workers between the knowledge getters and the knowledge dealers.

This important role of mediating between the research worker and the public has fallen on the shoulders of the general practitioner. Without this vital contact with the knowledge getters he cannot be a knowledge dealer and the quality of his practice is bound to degerate and lapse into quackery and empirism.

2. This is an age of science and technology. India is trying hard to catch up the other industrialised nations. The key-note of the present policy of the Union Government is industrialisation. This industrialisation is responsible for the shift of the population from the rural to the urban areas which is so noticeable now. Urbanisation always follows in the wake of indutrialisation. This industrialisation and urbanisation have led to a corresponding change in the structure of medical practice. Modern medical practice needs the help and the advice of a large number of specialists and of auxillary personnel. At the present time these facilities are most readily available in the well equipped hospital situated in towns and large urban districts. Besides, urban practice is very lucrative, as the rich people in towns can afford to pay the high fees such practice demands. Hence the tendency of young qualified medical men to congregate in towns and large urban districts. This shift of the medical practitioners to towns has led to a relative excess of practitioners beyond the need of the city public and to a depletion of medical practitioners to meet the need of the rural population. As a result, the poor sections of the country, the rural areas and the small communities, which are less able to assure adequate income to the practitioners, have fewer practitions in relation to the size of their populations and the practitioners in these areas are predominantly of the older age group.

It is, therefore, left to the general practitioner to bring the resources of modern medical science, as far as possible, to persons in smaller towns and rural areas and to those in the lower income groups who do not have access to hospitals with well organised out-patient departments. The idea that rural people can be treated separately from the urban people with any kind of medicine is a pernicious one. There are no two kinds of medicine, viz., rural and urban but only one kind, the modern medicine and it is the duty of general practitioner to see that this medicine is made available to people in rural areas.

3. Specialisation is not an unmixed blessing. Considered from the patient's point of view, it has complicated medical care in many ways and increased costs tremendously. "With increased specialisations the danger has become apparent that a situation might develop in which there would be fifty seven varieties of specialists to diagnose and treat fifty seven different varieties of diseases and lesions but no physician to take care of the patient". The specialist tends to confine his obse.vation of the cause of illness to the narrow field of vision with which he is most familiar. His special training and experience bring certain symptoms to the focus, while his lack of experience in other fields dims his appreciation of the meaning of equally important symptoms. He fails as a rule to consider the patient as a whole, either physiologically or psychologically. As the patients, for the most part, come to him only after the disease is well advanced the specialist's approach tends to be almost exclusively curative and only incidentally preventive."

Although the increase of specialisation has changed the structure of medical practice, basically "the social-psychological nexus" of relationship between the patient and the physician remains the same as it has been throughout history. The physician is not only a scientist but he is also a practitioner. "The education of the physician not merely as a technician, but as a cultured person equipped with insights into human relationships and sensitised by an appreciation of the social sciences and liberal arts, will do much to humanise the patient-physician relationship, whatever other factors may tend to formalise such relationship".

The need to consider the patient as a whole and the value of recognising diseases in their early stages to prevent serious developments, increases the importance of the completely trained general practitioner in modern medical practice. His function is to have an intimate knowledge of the patient and an overall responsibility for his health, no matter how many specialists serve him over the years. His role is to humanise the patient-physician relationship and not to allow it to become formal and mechanised.

One of the urgent problems of medical organisation is the dispersal of qualified medical practitioners from the towns, where they tend to congregate, to rural areas where their help is sorely needed. Many attempts have been made to lure the general practitioner to rural service but they have all so far proved unsatisfactory. Practitioners cannot be forced into rural services against their will. They can only be attracted to rural service by providing the necessary facilities for their practice in these areas. Medicine is both a science and an art and rare indeed is the practitioner who can maintain the high standards he acquired in his college under the physical, economic and educational limitations of the isolated rural community. Good practitioners are not

satisfied merely to earn a livelihood. They seek to practise medicine according to the high standards they have learnt in their colleges and for this they require facilities for diagnosis and therapy that are now found only in the urban hospitals. The first step in the dispersal of qualified practitioners from towns to rural areas should be the creation of hospitals in selected places, which will afford them all the facilities that are now found in urban hospitals, easy access to specialists and ample opportunities to gain knowledge and experience by association with the other members of the profession. This could be accomplished by converting the District Head Quarter and Taluk Hospitals into such centres. These hospital should be equipped with all the necessary uptodate laboratories and equipment on a scale which is now obtainable in urban hospitals. The basic idea should be to start as many as possible complete hospital units, which will attract young graduates to pursue their post-graduate education and gather experience in medicine, surgery and obstetrics. The metropolitan and other hospitals attached to existing medical colleges must be made to undertake the task of training young qualified graduates to man these hospitals.

The whole problem of rural medical service needs rethinking. The vast changes that have taken place in our villages since independence is not often realised. We still think of our villages as isolated and stagnant areas, cut off from every contact with the rest of the world and with no medical service whatever. This is not a correct appreciation of the situation. With the opening up of road, railway and bus communications, villages have been brought into closer contact with the towns and other places. Electric service is progressively being extended to more and more villages. These new facilities have changed and are changing the physical conditions of living in our villages and there is no reason, now, why medical practitioners should not be attracted to rural areas if the necessary facilities of practice are provided.

Another method which has proved its usefulness in village medical service is the use of "mobile clinics". The District and Taluk hospitals may be made the centres of such service by starting a number of these "mobile clinics". One well equipped "mobile clinic" can bring medical help to villages situated within a radius of ten miles. Such 'mobile clinics' are doing yeoman service in villages round about Vellore. It should not be difficult to organise such clinics from every District and Taluq hospital with the help of the general practitioners of these areas. Operated from hospitals or as an adjunct of the Public Health Service, they should be specially useful for maternal and infant care and immunising programmes and in providing periodic dental care. A service of this sort is also of value in educating the rural population of the fundamentals of hygiene and nutrition which is so urgently needed in our rural areas.

The establishment of District and Taluq Hospitals on the lines suggested above and the institution of a service of 'mobile clinics' will decentralise medical service from the urban hospitals, which are so over-worked as to interfere with their efficiency and disperse young medical graduates to the rural areas and incidentally provide them with the necessary patient load to earn a decent income. It is gratifying to see some States have started, though belatedly, to expand and equip their District and Taluq Hospitals and also to read the statement of the Union Health Minister that the call for rural medical service is meeting with satisfactory response. With the co-operation of the State Governments and the general practitioners a satisfactory solution will be found soon for the adequate medical service in rural areas.

Another problem which has attained critical importance is the inter-relationship between the practitioners of modern medicine and the practitioners of the so called 'integrated medicine'. Hitherto the two systems, viz., modern medicine and indigenous system of medicines, flourished side by side without coming into open conflict with each other. The citizen chose whatever system of medicine he preferred. The indigenous system adhered to their own traditional methods of training their men (vaidyas) and in some States there were institutions for the organised study and training in these systems. But since independence an attempt has been to revive these system of medicine and place their practice on a satisfactory basis. Not content with this endeavour some States have dreamed by making these systems as the medicine of their States. Other States have embarked on creating a 'neo-Ayurveda' called euphemistically 'integrated medicine'. 'Integrated Medicine' is an attempt to pour new wine into old bottles by compounding modern medicine with the ancient medicine into a new synthesis. Some States had started schools of 'integrated medicine' where both Ayurveda and modern medicine are taught, and are granting diplomas to those who qualified from these schools. These diplomates are taken on the medical register and are allowed to practise. Formerly rural dispensaries were located in a few villages under the charge of licentiates in modern medicine. On the recommendation of the Committee of Indigenous Medicine the rural dispensaries were placed in the charge of the diplomates of the school of 'integrated medicine'. This is the origin of the present unrest and confusion that prevails in general medical practice. The general practitioners, who hold a university degree in modern medicine and are trained in modern scientific methods, rightly resent the advent of these diplomates into the field of medical practice as an unwarranted interference with their legitimate rights, as these diplomats do not, as they should do, practise indigenous medicine but practise modern medicine in which they have no adequate training and qualification. This has led to the unhealthy competition between the practitioners of these two systems to the detriment of the quality of the medical service offered to the rural public.

This confusion and conflict would not have risen if the Union, as well as the State Governments, had given the correct lead to the nation on this subject. The State Government, in particular, have adopted a vacillating attitude towards this question. There can be no two opinions as to what system of medicine the Union Government should adopt. Independent India, if it is to be recognised as a progressive nation and take her

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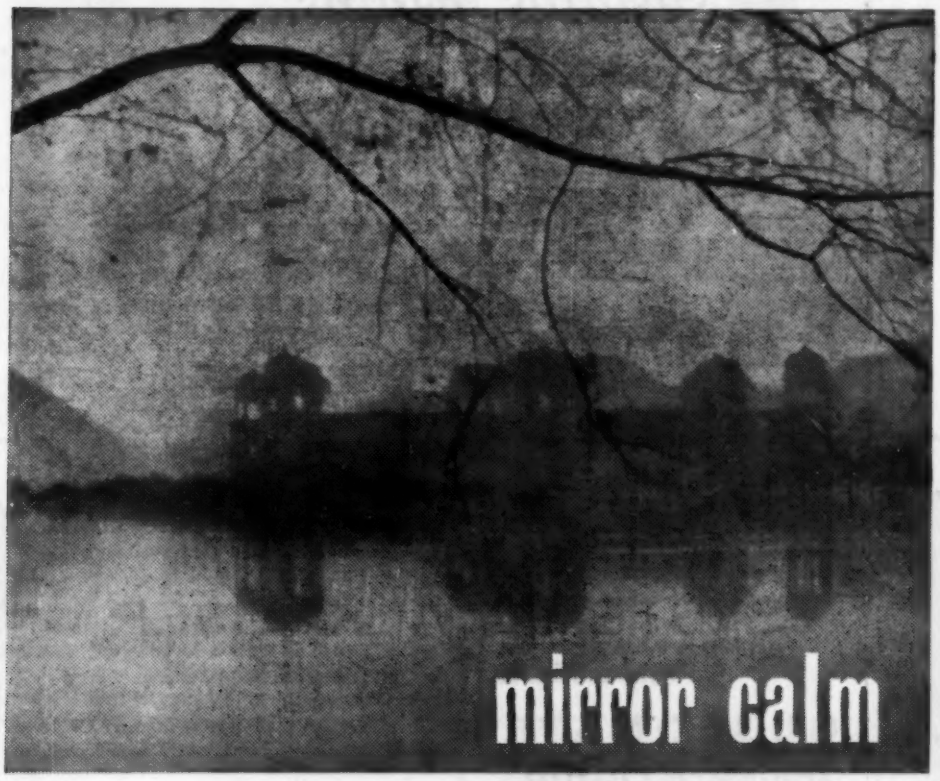

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place among the progressive nations of the world, must fall in line with these nations and adopt modern medicine which is the medicine followed by all the modern nations. It is too late in the day to indulge in debates over the relative merits of modern and Ayurvedic medicines and try to decry modern medicine or extol the virtues of Ayurveda. Such debates betray only an immaturity in thinking and lack of judgment. The citizen has a right to choose what system of medicine he desires and it is the duty of the Government to satisfy themselves that these practitioners are properly qualified and trained. This would mean that Government should have for the training of these practitioners institutions in pure Ayurveda or Unani and here its responsibility should end. The Prime Minister has very correctly stated the attitude of the Union Government on this problem in the following statement: "There is much controversy often about the Ayurvedic and Unani systems of medicine. It is necessary, however, that every approach to this problem should be made on the basis of the scientific method and persons who are Ayurvedic or Unani physicians should also have a full knowledge of modern methods. This means that there should be a basic training in scientific method for all, including those who wish to practise Ayurvedic or Unani systems. Having got their basic training a person may practise either system or Homoeopathy. The question is thus not a conflict between various systems but of sound education in Knowledge as it is today and then freedom to apply it according to any system. It is the scientific approach that is important." Modern scientific method cannot be imparted in the abstract but it can be imparted only as a part of the study of any science. So the solution suggested by the Prime Minister can be achieved only if it is made compulsory that every medical practitioner should have a basic qualification in modern medicine and then specialise in Ayurvedic or Unani or Homoeopathic systems of medicine and practise any or all of them if he so chooses. If the Union Government would implement the suggestion of the Prime Minister and see that the State Governments also follow its lead, then the tone and the quality of general medical practice would be vastly improved.

The nature of the work of the general practitioner calls for unusually broad knowledge but they are most often so taken up with their practice and generally isolated from hospitals or medical centres, that they have little time for continued training. The result is that in all parts of the country but particularly in the smaller and more isolated communities, there are general practitioners who still practise much the same way they learned in their student days. The majority of general practitioners have to work upon the store of scientific facts with which they set out in practice and of the advances made afterwards they are ignorant. Nothing would help more in making medical practice adequate for greater number than a method by which these practitioners could keep in touch with advancing science. The most immediate way to accomplish this is through association with good hospitals which should be made available to them. In order to make this possible in rural practice, hospitals, as above suggested, must be created as early as possible in District Headquarters and Taluqs. Even in cities where well-staffed and well-equipped hospitals are available, a considerable percentage of practitioners lack the necessary association with these hospitals. Association with well organised hospitals can do much to keep the practitioner upto date. Another means of keeping the general practitioner in touch with medical developments is to bring him back to a medical centre for a refresher course. Many practitioners, however, are not interested; others find it difficult to take off the necessary time. Some means must be found, therefore, to bring the practitioners into teaching hospitals or to bring the best "current science" to the practitioner in his place.

The above methods for continued training of general practitioners are to be found in many District Headquarter Hospitals and other places where enthusiastic practitioners abound. Even in smaller places there are associations arranging for the monthly meeting of practitioners round about. Experienced medical men from the wellknown hospitals are invited to address these meetings which are followed by discussions and free exchange of views. Besides in many hospitals, attached to medical colleges, refresher courses are run for the benefit of the general practitioners. But this has not become an universal practice. Steps should be taken for the refresher courses to be made a regular feature of all teaching hospitals. The annual gathering of the practitioners, of the District or the State, in conferences when all the practitioners meet and papers are presented and discussed, is another valuable forum for the continued training of practitioners. Clinical societies run by teaching hospitals and many District Hospitals are also doing valuable service for this cause. But all these activities are very often sporadic and compulsive. They flourish where there are energetic and enthusiastic District Medical Officers and general practitioners. It must be realised that all the above methods are vital to the well-being of general medical practice and effort must be made to introduce them in every District and Taluq hospital and see they function uninterruptedly.

What of the future? It was feared, when the importance of specialisation was mounting, that general medical practice would suffer a great setback and would be looked upon "as the recourse of the mediocre and unambitious" or "as a sort of purgatory for the abandoned in medicine". No such catastrophe has overtaken or will ever overtake the general practitioner. In recent times it has become a fashion to deprecate the art of medicine at the expense of the scientific aspect of medicine. This attitude is not justifiable. The art of medicine will ever remain the chief implement of the practitioner. It still forms and will continue to form the backbone of medical practice and is indispensible to mankind. Medicine arose out of the primal sympathy of man with man, out of a desire to help those in sorrow, need and sickness. As always, its mission will be to dry tears and give aid. As long as medicine retains this human element and does not become formal and mechanised with the growth of specialisation and nationalisation of medicine, the gene-

ral practitioner will remain as the sole dispenser of this human element in medicine.

Modern science and technology are revolutionising forces and wherever they operate they bring about a transformation in society and medical science. As a result of their operation momentous changes are taking place in the social, economic and medical fields in India. A new State, the welfare State, is developing, whose main characteristic is industrialisation and raising the standard of living of the nation and also a new medicine, social medicine, highly technical and highly specialised, whose aim is to make the people healthy and happy by creating an atmosphere in which the citizen has no excuse not to be healthy. This is a slow and gradual process, but already we are becoming aware of these changes. Facing this new situation what are we doing? We are endeavouring by all means available to preserve the old forms of medical service, forms that were adopted to a society and to a medical science that do not exist any longer.

"A new medical science with broadened tasks is called upon to serve a new type of society and this obviously calls for adjustments, for a system that will permit the practitioner to make full use of the new technology and to practise preventive medicine on a large scale. For over five thousand years individuals fell sick before they saw a physician. The time has come for the physician to see people before they are sick and to advise them how to maintain their health". There is no point in letting people break down and suffer from preventable diseases. There are enough sources of suffering in the world that may not be prevented so easily. The major tasks of medicine in the future will be the maintenance and promotion of health, the prevention of disease, healing when prevention has broken down and finally the social rehabilitation or reintegration of the former patient into society.

"The focus of medical practice has shifted from disease to the patient. Moreover, because of the trend to supplement the curative aspects of medical care by the preventive, interest has developed in the social aspects of the patient. Today the physician is increasingly associated with the forces in the society which recognise the close inter-relation between the individual welfare and social welfare and which seek to create a social environment conducive to the development of the fullest physical and psychological potentialities of the population. In this respect medical science has become a social science".

The physician in a welfare state needs to be a social physician protecting the people and guiding them to a healthy and happier life. Granting that it is his traditional function to cure and alleviate diseases there is need for him to orientate towards those who are not diseased but yet are not fit. He should be the "health man" rather than the "medicine man" and above all he must remember that he is a citizen, the most valuable yet evolved.

While the functions of the general practitioner will never cease to be, the future of the general practitioner will depend on how far he is able to orient himself to this new conception of the welfare state and the new conception of medicine as the science of positive health. The young practitioner who settles in a rural area goes to an open land, not merely as a therapeutist but as an apostle, a missionary of health, as a propagator of health ideals, as a guide of the population towards a healthier and happier life. Society has challenged the profession by giving it greater tasks and more power than before. Will the present generation of general practitioners take up the challenge and vindicate its trust in them?

Let me close with the exhortation of Sir William Osler to medical practitioners. Speaking of those physicians in general practice, often in isolated communities or very difficult surroundings, Osler said: "To you is given the harder task of illustratinng with your lives the Hippocratic standards of Learning, of Sagacity, of Humanity and of Probity. Of learning, that you may apply to your practice the best that is known in our art, and that with the increase in your knowledge there may be an increase in that priceless endowment of sagacity, so that to all, everywhere, skilled succour may come in the hour of need. Of a humanity, that will show in your daily life, tenderness and consideration to the weak, infinite pity to the suffering, and broad charity to all. Of a probity, that will make you under all circumstances true to yourselves, true to your high calling and true to your fellow men".

NOTES AND NEWS

Nobel Prize for Medicine

Professor Georg Von Bekesy, 62, Hungarian-born physicist now at Harvard University, Cambridge, Massachusetts, U.S.A., has been on October 19, 1961 awarded the Nobel Prize for Medicine, for his research on physical stimulation of the cochlea.

Health Programmes Lag Behind for Lack of Funds

"Funds for public health, although gradually increasing, still remain very inadequate", says Dr. C. Mani, WHO Regional Director, in a review of health progress in South East Asia, which forms part of his Annual Report to the Fourteenth Session of the WHO Regional Committee for South East Asia, held on September 19-25, 1961 in Ootacamund (India). The report covers the period July 1960—August 1961.

"Essentially public health is a purchasable commodity", Dr. Mani says. "One can purchase it only to the extent that one can afford".

Conceding progress in two vital spheres—control of communicable diseases and training of health workers, Dr. Mani warns that training of personnel is still much behind the actual requirements of new programmes and stresses the need for careful advance planning.

The following are the highlights country by country in South East Asia.

AFGHANISTAN :

A programme to protect about three million people against cholera was launched after an outbreak of the disease in Kandahar, Jalalabad and Kabul.

Appreciable improvement was recorded in some aspects of maternal and child health services following reorganisation of the staffing and service patterns.

To meet the shortage of girls with the basic academic education to train as nurses, a scheme was started to designate VI Grade girl students as nursing students and make it obligatory for them to join nursing institutes on passing the IX Grade.

BURMA :

Control of infectious diseases, especially cholera and smallpox, was undertaken by the public health staff assisted by 10 mobile epidemic teams each serving four districts.

Diet surveys and studies on early failure of lactation in nursing mothers were undertaken by the Nutrition Division of the Health Directorate.

Appreciable work was done in health education of the public including the organisation of health exhibits at fairs and festivals and the production of slides and handbooks on different subjects by the Health Education Bureau.

INDIA :

The National Malaria Eradication Programme continued to make headway backed by supplies of DDT from the country's own production plants at Delhi and Always (Kerala State).

A serious outbreak of poliomyelitis was recorded in Andhra Pradesh early in 1961, it was rapidly brought under control.

Efforts continued to make the country self-sufficient in vaccine production, particularly in respect of smallpox vaccine required for the proposed countrywide smallpox eradication campaign. Plans were drawn up for establishing a major antibiotics factory.

The Community Development programme, covering nearly 370 thousand villages with a population of 203 million, made further progress. Shortage of health workers continued to be the greatest handicap to expansion of the public health aspects of the programme.

A special Nutrition Division was created by the Central Government and a National Nutrition Advisory Committee was set up.

INDONESIA :

Increased incidence of smallpox was reported from many areas of the country. The National Yaws Control Programme was expanded to include the outer islands. After a review of the malaria eradication programme it was decided to concentrate efforts on the central group of islands before extending operations to the less developed parts of the Archipelago.

The problem of malnutrition received special attention. The help of an FAO expert was obtained to outline a scheme for a food consumption survey in Java and Bali.

NEPAL :

Plans were drawn up for mass inoculation campaigns against smallpox and cholera.

A school for training in health statistics and census operations was set up with financial and technical assistance from ICA, FAO and the Indian Aid Mission.

Plans were drawn up to provide piped water to a number of towns (Amlekganj, Pokhra, Sukka, Palambo and Biratnagar) and to improve water supply in Kathmandu.

A 60-bed hospital was constructed at Birganj with funds raised locally by public subscriptions and a 50-bed general hospital, with USSR aid, was under construction in Kathmandu. Plans for a 250-bed hospital to be built with ICA aid (replacing the 150-bed Bir Hospital at Kathmandu) were under consideration.

THAILAND :

Cholera after being epidemic in 1958 and 1959 was not reported. A large number of smallpox vaccinations were performed by the yaws team operating in the country.

A new communicable disease hospital was opened on the outskirts of Bangkok and the new building for the School of Tropical Medicine and Endemic Diseases was completed.

A pilot nutrition survey was started in the north-east province of Ubol. An investigation carried out in the goitre area of Prae province, with the use of radioactive iodine, established iodine deficiency as the cause of goitre.

WHO Will Spend $3m. in India

Over $3 million has been earmarked for health project in India in the 1963 budget of the World Health Organisation's South-East Asian Regional Committee.

The $8·5 million budget was adopted by the committee at its recent session at Ootacamund. Dr. C. Mani, who is the regional director for South-East Asia, New Delhi, said that these figures included funds provided mainly for supplies and equipment by UNICEF and UN Special Fund.

The regional committee, while adopting the budget, noted that over 40 per cent WHO's field programmes was devoted to some form of training of national staff. The committee also noted with satisfaction that a number of staff employed by WHO at its regional office at New Delhi, including international and nationally recruited staff, was scheduled to remain at the same level in 1961, 1962 and 1963 in spite of the fact that the work of the regional programme had been increasing during this period.

United Nations Progress Report on Radiation

A 15-member scientific committee on the effects of atomic radiation said in a report issued on 22-9-61 after a new series of meetings that the resumption of nuclear testing increased "the urgency for intensification of relevant scientific studies."

The committee, which had Dr. Ferdinand Hercik as its Chairman for the recent session, and Dr. Kempo

Tsukamoto as Vice-Chairman, included Soviet representation.

The committee met at U.N. headquarters from August 28 to September 15, discussing further draft annexes and the first draft of the main text of its forthcoming comprehensive report.

The committee said it hoped to continue to receive from Governments, specialised agencies, and the International Atomic Energy Agency information on "radiological questions, radiation levels and contamination occasioned by fallout, disposal of radioactive wastes, and accidental releases of radioactivity."

Members of the committee are scientists of Australia, Argentina, Belgium, Brazil, Canada, Czechoslovakia, the U.A.R., France, India, Japan, Mexico, Sweden, the United States and Britain.

More Men Have Heart Attacks

Coronary heart diseases caused nearly onefifth of the total number of deaths in England and Wales during the quarter ending June 30, according to figures issued by the Registrar General on 10-10-61.

It accounted for 91,961 lives, 7,039 more than at the same time last year.

Nearly half the 56,514 men who died from the disease were aged between 45 and 64, while the most dangerous period for the 35,447 women was 75 and over.

Two other main causes of death were bronchitis (28,485) and cancer of the lung, which killed 2,200.

Five people died from diphtheria, 23 from acute polio and 1,098 from influenza.

Toll of Chronic Bronchitis in U.K.

Chronic bronchitis is costing Britain over 25 million working days a year, Lord Cohen of Birkenhead, Professor of Medicine at Liverpool University, said recently at Brighton (England).

Lord Cohen, giving his presidential address to the annual conference and exhibition of the National Society for Clean Air, said that deaths in England and Wales from the disease were fifty times more than in Denmark and about twenty times more than in Norway and Sweden.

There was no evidence yet that smoke and fumes from diesel vehicles were detrimental to health but there were "adequate reasons" for abating the nuisance.

Industrialisation, Lord Cohen said, had "poisoned the air man breathed, caused chronic bronchitis and culminated in the worst pollutant, the atom blast."

Increase in Cleft-Palate Births in Japan

Atomic bombs dropped in Japan in 1945 were responsible for tremendous increases in cleft-palate births in that country, a Winnipeg orthodontist said on 22-9-61.

Dr. Benjamin B. Cantor, who recently returned from a research mission in Japan told reporters the number of cleft-palate births there had risen from one in 10,000 to one in 1,000 since the war. He was one of a 14-member medical team sent to Japan by the U.S. Government under the auspices of the Kennedy Foundation and the World Health Organisation of the United Nations.

Test Tube Embryo Kept Alive for About a Month

Professor Daniele Petrucci, Italian test tube embryo experimentor announced early this year that he had achieved artificial fertilisation of a human egg in a test tube and kept the embryo alive for 29 days.

He said, he and his laboratory assistant had worked for five years to achieve the test tube fertilisation, but that later they had been able to do it 40 times.

He left for Moscow on invitation of the Soviet Government for talks with Soviet specialists, and would remain there three weeks.

Conference on Medical Education

A Conference on Medical Education organised by the Medical Council of India will be held at New Delhi on November 23-25, 1961. Shri Jawaharlal Nehru, Prime Minister of India has agreed to inaugurate the Conference on Thursday, the 23rd November, 1961, at Sapru House, Barakhamba Road, New Delhi at 9-30 A.M.

The holding of the conference has been necessitated in order to accommodate the divergent views of the various bodies and teachers connected with medical education in the country and also to have a full and frank discussion on all aspects of undergraduate medical curriculum with representatives of the universities and teachers of the medical college sand others connected with medical education. This will enable the Council to finalise the curriculum to satisfy the minimum requirements, and to lay down standard requirements and schemes for training of postgraduates in the various specialities in order to evolve a uniform pattern of postgraduate medical education leading to the award of degrees or diplomas in the various branches of medicine, in accordance with the provisions of Section 20 of the Indian Medical Council Act, 1956.

It had also been decided that the question of laying down standard requirements and schemes for postgraduate training in the various specialities prepared by the Sub-Committee of the Medical Council of India had already approached specialists to prepare the draft standard requirements and schemes for training in their respective subjects. Such schemes are being prepared in the following specialities :

1. Anatomy; 2. Physiology; 3. Pharmacology; 4. Pathology; 5. Medicine; 6. Surgery; 7. Obstetrics and Gynaecology; 8. Social and Preventive Medicine; 9. Tuberculosis and Chest Diseases; 10. Skin and V.D.; 11. Cardiology; 12. Psychological Medicine; 13. Paediatrics; 14. Neurology; 15. Ophthalmology; 16. E.N.T.; 17. Orthopaedics; 18. Anaesthesia; 19. Neuro-Surgery; 20. Thoracic Surgery; 21. Plastic Surgery.

The representatives of I.M.A., universities, State Governments, State Medical Councils, medical institutions and teachers have been requested to take active part in the proceedings of the Conference.

The Railway Board has been pleased to grant single fare double journey rail concession to the participants and the required certificate for this concession can be

obtained by the participants from the Secretary of this Council, from whom a detailed programme may also be available, on application.

WHO Conference on Nursing Services

The first World Health Organisation's Asian regional conference on nursing services will be held at Colombo on November 20.

Delegations from countries in the Asian region are expected to attend the conference.

According to the Ceylonese Health Department sources the main purpose of talks was to improve the pattern of nursing, care and training facilities.

World's Population Grows Faster than Food Production

The world's population grew faster than its production of food over the past year, the U.N. Food and Agriculture Organisation reported on 1-10-61.

"In 1960-61, there was only a small increase in the total volume of agricultural production, and preliminary FAO estimates for the world, excluding mainland China, show a rise of no more than one per cent over the previous season," its 1961 report said.

"This is less than the annual population growth of 1·6 per cent, but taking the last two seasons together, production appears to have continued to increase slightly faster than population.

After a large increase in production in 1958-59, there was a slowdown in 1959-60, when the increase, excluding mainland China was about two per cent against an estimated world population growth rate of 1·6 per cent a year.

But the report, based on statistics available up to last June 30, shows that world food output per head has risen about six per cent in five years, and is 14 per cent more than before the war.

Sex Ratio in India

Women in India are getting fewer than men, according to an official analysis made of the sex ratio for the last 60 years, from 1901 to 1961.

Kerala, Andhra Pradesh and Rajasthan show fluctuations between 1901 and 1961. Assam and Bihar show a stationary ratio between 1951 and 1961. Gujarat shows a slight deterioration, while Madhya Pradesh, Madras, Maharashtra, Mysore, Orissa and Uttar Pradesh show an appreciable downward trend. Punjab and West Bengal have slightly improved their sex ratio.

And if the States were to be arranged in decreasing order, of sex ratio, a curious pattern would seem to emerge roughly on either side of latitude 22 degrees. The State-wise sex ratio is appreciably lower north of latitude 22 degrees than south of it.

One Million Malaria Deaths a Year

About one million people die of malaria each year and an estimated 150 million, throughout the world contact the disease in the same period according to Dr. Carlos Alvarado, Director of Malaria Eradication for the World Health Organisation.

He said in a statement that although the disease was still rampant, it could be effectively countered by insecticide spraying.

New Drug for Cancer

The decision by the U.S.S.R. Ministry of Health to introduce a new preparation called Krutsin in the treatment of cancer, which might promise a possible breakthrough to a successful treatment of the disease, is a triumph for two Soviet research workers.

For over 25 years, the Soviet histologist, Dr. Roskin, assisted by a woman microbiologist, Dr. Kluyeva, were doing research on a curious phenomenon of disease called "Chagos" prevalent in certain parts of Chile and Brazil where cancer was virtually unknown.

Eventually, the two scientists perfected a preparation based on the "Chagos" microbe for application to external cancer tumours.

The preparation should soon be on sale, it is announced.

Air Pollution Problem

The Council of Europe's Consultative Assembly recommended recently the calling of a conference on the problem of atmospheric pollution, particularly that caused by automobiles, trucks and other vehicles.

It suggested the conference should draft a European convention on air pollution.

The Conference would be attended by scientists, technicians, doctors, industrialists, a representative of the World Health Organisation and delegates from the Council of Europe.

Alien Scents may Help Birth Control

Men of the future may control fertility by spraying themselves with a birth control perfume, says Dr. A. S. Parkes, of the National Institute for Medical Research, in an article in *Nature*, the science journal.

He suggested this possible method of population control in recording experiments with newly mated female mice which fail to reproduce if they are exposed to the smell of alien males from a different strain.

"The observation is evidently of great interest and potentiality," he says. "The attractive idea of a contraceptive perfume is no longer quite incredible."

Soviet Medal for Bombay Surgeon

Dr. A. V. Baliga, a surgeon from Bombay, was presented with the Vishnevsky Medal, instituted by the Soviet Academy of Medical Sciences to honour outstanding surgeons.

The medal was presented to Dr. Baliga on behalf of the Academy by the Soviet Ambassador in India, Mr. I. A. Benediktov.

Ophthalmic Plant at Durgapur

The final project report towards the construction of the ophthalmic plant at Durgapur has been submitted by the Soviet experts, it is officially learnt.

The Heavy Engineering Corporation has acquired about 200 sq. acres of land in Durgapur in a big portion of which this ophthalmic plant will be raised with Soviet help. In the remaining portion the coal mining machinery project will come up.

Preliminary works relating to the ophthalmic plant will be taken up shortly.

CORRESPONDENCE

The Editor is not responsible for the views expressed by correspondents

Semi-Doctors

SIR,—It is painfully shocking to see in the press and elsewhere under 'Correspondence' the views expressed as regards the deliberations about the recent Hyderabad Session of the Conference of the Health Ministers of States and the remedy adopted by them to provide medical relief to our people owing to shortage of doctors. A more unwise step and a deleterious one cannot be thought of. It speaks of their colossal ignorance of the living conditions and the state of affairs in our country. My attention was drawn about the recent opening of medical schools again by the Mysore Government which I had termed as a retrograde step. On top of it the creation of 'Semi-doctors' as they are called in our State is a paradox ununderstandable and unimaginable. That the Health Ministers of States should have conceived of this dangerous step of giving a short training to young men and young women ostensibly on the score of medical relief is rendering a disservice not only to the people of our country but also to the entire profession of medicine. All of us are aware that a little knowledge is a dangerous thing and much more so in the realm of medical science which has advanced by leaps and bounds and requires a highly qualified personnel for admission into Medical Colleges to undergo the strenuous course and become doctors. Therefore, these short trained young men and young women even to be trusted to treat ordinary ailments are a source of danger to society as they would produce more complications which could be nipped in the bud by efficient treatment.

The Madras State has been a forward State and had gone ahead of other States in the matter of medical reforms such as a uniform standard of medical education, unification of the Civil Medical Services, so on and so forth. Ministers of Health in this State in the past have been responsible for these reforms in conjunction with the leaders of the profession and medical associations. What surpasses now is, I consider, a tragedy which if persisted, more and more harm would be done to the public. As custodians of the health of our country, our State Health Ministers should have a broader vision and outlook in matters of public and medical education and not embark on schemes which are doubtful and dangerous. There is no dearth of medical men in our State for medical relief provided the requisite emoluments and amenities are afforded and particularly in rural areas. I implore on the Ministers of Health in different States to give up this dangerous step which would be only augmenting quackery already rampant in our country. Lastly, I consider the attempt on the part of the State Ministers is a challenge and an eye opener to the Profession to stick up to its ideals of rendering relief to human suffering irrespective of any reward and thus maintain the dignity, integrity and honour of the noble Profession of Medicine in all spheres.

The exploration of Indigenous Medicine is still in the making and no practical and forward steps are taken in making the needed research. The fact that L.I.Ms and G.C.I.Ms have taken to modern scientific medicine after their integrated course is proof positive of the popularity of modern medicine which they practise. I am, etc.

D. V. VENKAPPA
Ex-President, I.M.A., A.I.M.L.A.
and Member, Medical Council of India

Madras

Treatment of Tuberculous Glands

SIR,—Two sisters were seen with enlarged cervical glands of various sizes. A biopsy revealed them to be of tuberculous origin. Both the patients were previously treated with I.N.H. and P.A.S. for six months without much relief. They were now given streptomycin and P.A.S., and no appreciable improvement was noticed after three weeks. At this stage P.A.S. was replaced by capyna, and we noticed appreciable reduction in the size of the glands after 3 to 4 weeks of treatment and the glands completely disappeared after 3 months. The patients gained in weight during treatment with capyna, and experienced a sense of well-being during the treatment. No untoward symptoms, such as gastric irritation, nausea, etc., was noticed during the treatment with capyna. The result appears to be encouraging. I am, etc.

P. BHATTACHARYA, D.T.M.

Bagbazar, Calcutta

REVIEWS

Techniques of Thoracotomy—By B. T. Le Roux, M.B. CH.B., F.R.C.S.E.; 1961, E. & S. Livingtone Ltd., Edinburgh; 10"×7", pp. 94; 55sh. net.

The reviewer finds that the various techniques of thoracotomy have been dealt with thoroughly with beautiful photographs and illustrations. The book will be very useful to everybody interested in thoracic surgery.

S. BANERJEE

Demonstrations of Physical Signs in Clinical Surgery—By Hamilton Bailey, F.R.C.S. (ENG.), F.A.C.S., F.R.S.E.; 13th Edition, 1960, John Wright & Sons Ltd., Bristol; 8½"×5½", pp. xiv+928; 75sh. net.

The book is a masterpiece in clinical surgery and surgical diagnosis. It is therefore very valuable not

only to students both undergraduate and postgraduate but also to teachers in surgery. The book is so lavishly illustrated as to give life to surgery. The author should be congratulated.

A. K. D. G.

Varicose Veins : A Practical Manual—By R. Rowden Foote; 3rd Edition, 1960, John Wright & Sons, Ltd., Bristol, 9½"×6½", pp. xx+356; 63sh. net.

The book contains all that a surgeon wants to know about varicose veins. The chapter on Historical Landmarks in Treatment is a unique feature of this book. It is a very valuable guide to research workers in the subject and should be in every medical library.

A. K. D. G.

Emergencies in General Practice—By J. R. Goyal, M.B.B.S., 2nd Edition 1960, Medical Review of Reviews, Burn Bastion Road, Delhi; 9½"×6½", pp. 270; Rs. 12.00.

This book has been written with the intention of helping general practitioners in managing all types of emergencies encountered by them. To justify publication of this book, the author claims that a comprehensive manual containing diseases belonging to all branches of medicine is necessary as "books by foreign authors deal with only one or the other branch of medicine" due to prevalence of specialisation outside India. He, however, states that this book is not meant for "specialist all round" type of practitioners.

In dealing with management of emergencies, each item begins with a short note on aetiology and symptomatology of the condition without which intelligent approach to treatment is not possible. To keep pace with the advance in modern medicine, the book is claimed to have been made up-to-date.

The attempt is praiseworthy. Such a work is needed for the management of those types of cases met with in general practice. It is arranged according to main symptoms presented by a patient to a general practitioner. Certain chapters are fairly well written.

However, many may not agree with or even object to observations such as : omission of anticoagulant in coronary failure, use of the term 'nephrosis' instead of more commonly used (though imperfect) 'nephrotic syndrome', omission of the use of modern diuretics (viz., chlorothiazide, etc.), salt-free dextran and albumin, advocacy of avoiding 'additional salt from the diet' in nephrosis (instead of 'salt-free' diet), the claim that penicillin can "reestablish output and control oedema" in acute nephritis; sympathectomy in the treatment of choice in malignant hypertension, omission of drugs like melamylamine (guanethidine and bretylium tosylate were not widely used in early 1960), etc., to mention only a few.

A few mistakes have inadvertently crept in such as "barbiturate or some other derivatives of morphine" in the treatment of haematemesis.

The bibliography deserves greater attention. Certain references quoted in the text are found lacking. Standard method of listing references will be more helpful.

A. K. CHAUDHURI

Manual for Examination of Patients, 1960, Year Book Publishers, Chicago, U.S.A.; 7½"×4½", pp. 231; $4·50.

This manual prepared and edited by an interdepartmental committee of the University of North Carolina School of Medicine has been primarily written for the use of students, house officers and staff of that medical school. It has, however, much to offer to students (both undergraduate and postgraduate) of other institutions.

The authors have attempted to present a new approach to the examination of patients. More emphasis has been given on history-taking than on physical examination. Special attention to interview and examine patients from the psychiatric aspect deserves commendation, as a proper assessment of the mental condition of a patient is important not only to diagnose mental disease and an increasing number of psychosomatic disorders but also to evaluate functional overlay on organic diseases. Examination of infants and children has also been admirably dealt with . The chapter on evaluation of comatose, stuporous or non-cooperative patients will be really very helpful to students and doctors. Part II containing laboratory procedures and examination has occupied more than half the volume of this manual. Various laboratory tests including method of collection of materials have been described in some detail. It will be useful for house staff working in a hospital with a fairly well equipped side-room laboratory.

The authors are to be congratulated for this endeavour. A little more attention to detailed description of the method of eliciting physical signs would possibly have made this manual useful also to students who are commencing their training in clinical medicine.

A. K. CHAUDHURI

Scientific Aspects of Neurology—Edited by Hugh Garland; 1961, E. & S. Livingstone Ltd., Edinburgh; 9½"×6", pp. 264; 50 sh.

The contributors of this interesting monograph are distinguished authorities in their chosen topics. Some of the clinical articles will be of particular interest to those engaged in teaching and clinical research. It is refreshing to note that the contributions are not weighed down with newer laboratory techniques. Topics of contemporary interest have been clearly examined in their historical context. Past, present and the direction of future trends have been well said within the limited space. References are well selected but one interesting contribution appears without a list of references.

The reasons for calling this monograph 'Scientific Aspect of Neurology' are not very clear.

The main theme of the book is an attempt to enlarge the horizon in the ever-expanding field of neurology.

T. K. GHOSH

OBITUARIES

Dr. S. R. Mitra

Dr. S. R. Mitra of Abuni-Magura, a direct member of the I.M.A. Bengal State Branch, died of high blood pressure on 6-8-1961. He was only 57 years. He was very popular and held in high esteem for his kindness and service to the people of his locality.

Dr. Mitra is survived by his mother aged 80 years, two sons and three married daughters.

Dr. Nagendra Nath Sarker

Dr. Nagendra Nath Sarker, a member of Dooars Branch, I.M.A., expired on August 6, 1961 at the age of 53 years.

DR. N. N. SARKER

Dr. Sarker qualified from Dacca Medical School in the year 1934. Since then he had been working as Medical Officer, Kalchini Tea Estate in Dooars. He died of a sudden heart attack.

Dr. Sarker leaves behind his widow, three sons and six daughters.

A person of amiable nature, Dr. Sarker was connected with many social and cultural associations.

Dr. K. C. Ghosh

Dr. Kshitish Chandra Ghosh, Medical Officer of Red Bank Tea Estate, passed away on September 5, 1961.

Dr. Ghosh was born in a village named Jalalia in Tangail Sub-Division of the District of Mymensingh (at present in East Pakistan) in 1905. Dr. Ghosh matriculated in 1923. He passed the Intermediate Examination in Science from the Coochbehar Victoria College. For sometime he was a student of Vishwabharati. He secured a Government scholarship by dint of his merit and passed the State Medical Faculty Examination of Bengal in 1929 from the Lytton Medical School, Mymensingh. He obtained a special certificate of proficiency and served for sometime as a House Surgeon in the S. K. Hospital, Mymensingh. He was also a member of the Bengal Council of Medical Registration. In 1933 he was appointed medical officer of the Red Bank T. E. under M/s. Andrew Yule & Co., the post he held till his death. During his service, he occasionally contributed to medical journals. He was a reputed 'Shikari' in the locality. He had in him all the essential traits of a fine gentleman. Dr. Ghosh was 56 and is survived by his old mother, wife, two sons and four daughters amongst others to mourn his untimely passing away.

YOUR QUESTION

Correspondents should give their names and addresses (not necessarily for publication) and include all relevant details for the questions which should be typed. Questions of medical interest will only be accepted for this section. They should be sent in a separate envelope marked "Your Questions". Questions of general interest will be published in preference. Lack of space precludes answering all the questions received.

ED.—*J. Indian M. A.*

The Growth Hormone of the Anterior Pituitary

Q. It is said that the height of growing children who are otherwise quite healthy can be increased by an inch or even more by injections of anterior pituitary hormone at an age nearing puberty (13-16 years), i.e., before the fusion of certain bones is complete. One would like to know the opinion of experts in this matter.

Ans. The growth hormone of the anterior pituitary, although the most important, is not the only growth-promoting factor. Thyroid, gonads, and to a less extent, adrenal cortex play quite an important part. The final end-result of the action of the endocrinous growth-stimulating substances are dependent on how efficient the metabolic processes of the body are. In absence of any retarding influence like infection, disturbed metabolism, etc., the growth hormone of the anterior pituitary can certainly increase the growth by about an inch or even more when administered at a reasonable period before the ossification and epiphyseal fusion of the growing ends to the diaphysis of the long bones, and to a less extent the vertebrae, are complete.

However, human pituitary growth hormone has been found to possess physicochemical properties that are markedly different from those of the growth homone isolated from lower animals. Injections of growth hormone (extracts from glands of cattle) into human pituitary dwarfs have proved completely ineffective, probably because of species differences.

Apart from growth hormone, the nature of food consumed by young children may influence the rate of growth. In many instances milk and other foodstuffs of high nutritive value have produced an increased rate of growth in seemingly normal children without any growth hormone being administered.

It is also important to note that the rate of growth varies in different races and in different members of the same race. This is said to be due to inherent characters of the chromosomes of the sperm and ovum.

ERRATUM

Vol. 37, No. 8, October 16, 1961, page 401, Column 1 : The name of the author of the article, UNDERGRADUATE MEDICAL EDUCATION IN INDIA, *should read* S. K. UPADHYAY. The error is regretted.—ED., *J. Indian M. A.*

SUPPLEMENT
Journal of the Indian Medical Association

VOL. 37, No. 10 CALCUTTA NOVEMBER 16, 1961

XXXVII ALL INDIA MEDICAL CONFERENCE 1962, KANPUR

The 37th All India Medical Conference will be held at the G. S. V. M. Medical College, Kanpur in the 1st week of January 1962. The exact dates are :

Working Committee meetings : 29th, 30th and 31st December 1961
Central Council meetings : 1st, 2nd and 3rd January 1962.
37th All-India Medical Conference : 4th, 5th and 6th January 1962.

Kanpur is situated in Uttar Pradesh on the right bank of the Ganga on the main line of the Northern Railway and is directly connected with Delhi and Howrah. It is also connected with Lucknow, Jhanshi, Banda, Patna, Agra and Siliguri. Visitors from the Punjab can come either through Lucknow or Delhi; from Rajputana and Gujarat through Agra; from Maharastra, Madhya Pradesh, Andhra, Kerala, Mysore and Tamil Nad through Jhansi; from Orissa, Bengal and Bihar through Moghal Sarai; and from Assam through Siliguri.

Kanpur is also connected with a large number of cities and towns in U.P. through U.P. Government Roadways buses.

Kanpur is not on the Air-map of India. The nearest city is Lucknow about 72 km. from Kanpur.

The climate of Kanpur will be fairly cold during the Conference period. There may be chances of winter showers as well. Visitors are, therefore, advised to bring sufficient warm clothes and beddings (at least two blankets).

Hotel accommodation is not very satisfactory. Visitors desiring hotel accommodation are requested to intimate their requirement adong with the reservation amount at the earliest, otherwise it may not be possible to secure hotel accommodation. Below are given names of the hotels :

Name of Hotel	Type	Distance from venue	Charges per day
1. Berkeley ...	Western	4 miles	25/-
2. Valerio ...	do.	5 ,,	20/-
3. Cawnpore ...	Vegetarian	4 ,,	10/-
4. Central ...	Non-vegetarian	5 ,,	10/-
5. Bellevue ...	Western	5 ,,	20/-

Staying arrangements for the visitors have been made at the Conference Campus, which is inside the premises of G. S. V. M. Medical College. Special arrangement has been made for ladies. Visitors coming with their families will be provided separate facilities for staying.

A Reception and Enquiry Office will be opened at the Kanpur Central Station and volunteers will receive the visitors, provided due information about the date and time of arrival is intimated.

Beds will be provided in the Delegate Camps. A Dining Pandal will be put up near the Conference venue where Breakfast, Lunch, At Home and Dinners will be served, for which the visitors will have to purchase Meal Coupons (both vegetarian and non-vegetarian meals will be served).

Charges for the Conference will be :

1. Delegates ... ... Rs. 5/-
2. Members of I.M.A. other than delegates ... Rs. 5/-
3. Medical men who are not members of I.M.A. Rs. 10/-
4. Special Visitors ... ... Rs. 5/-

The Railway Board gives the concession of Single Fare Double Journey to the members of the medical profession only for attending the Conference. Medical men and women wishing to avail of the concession are requested *to remit the registration fee of Rs. 5/- at the earliest, so that the Concession Form may be issued to them.* They are not for the use of the families unless they are entitled in their own right.

Scientific Lectures and Scientific Symposium on Coronary Arteries Diseases and Panel discussion on Peptic-ulcer are being arranged. Members who want to take part in the Scientific lectures, Symposium and Panel discussion, are requested to contact the Organising Secretaries immediately.

Besides, a Scientific and Pharmaceutical Exhibition, a Medical Photographic Exhibition is also being arranged. Members in possession of interesting photos, paintings, sketches (whether medical or non-medical) and skiagrams are requested to send the same by the 15th December 1961.

On the occasion of this Conference and the Golden Jubilee Celebrations of the Kanpur Branch of I.M.A., the Reception Committee is publishing a Souvenir which will be profusely illustrated, richly contributed, highly informative and worth preserving. It will be presented to all V. I. Ps., office bearers, delegates and other members (participants) of the Conference. Publication of more than 3,000 copies is contemplated. As such, it will serve a very efficient medium of advertisement among the members and families of the medical profession.

Its size will be 27×21 cms. The charges for ordinary insertion will be :—

Full page	Rs. 350	
Half page	,, 200	
Special Position	,, 50	extra
Second Cover	,, 500	
Third ,, ...	,, 550	
Fourth ,, ...	,, 600	

Advertisement charges are payable in advance. Allotment of space for advertisements will be made in order of priority of applications, as far as possible.

The Souvenir Sub-Committee's decision on all matters will be final and the Sub-Committee reserves the right to accept or reject any advertisement. Alternative choice

may kindly be intimated to save delay in correspondence.

Excursion tours to places of interest in and around the city will be arranged. There will be no charges for excursion within the city, but for excursions outside the city, the visitors will have to pay extra. Excursion to Khajuraho is contemplated, if sufficient number of delegates want to join, for which earlier information is required. Important places worth visiting in Uttar Pradesh are Taj and other historical monuments at Agra, Ghats at Varanasi, old buildings and gardens at Lucknow, Fort and Sangam at Allahabad, etc.

To familiarise the visitors with the culture of Uttar Pradesh, cultural programmes are also being arranged which will make the delegates' stay more pleasant. Limited number of unmetered taxies are available.

Further information will be available from Dr. R. K. Jalota or from Dr. Navin Chandra, Organising Secretaries, The Temple of Service, Mahatma Gandhi Road, Kanpur.

BRANCH NOTES

BALLIA BRANCH—A special meeting of the branch was held in the District Hospital; Dr. Gopi Ballabh Sahai, retired Principal, Darbhanga Medical College was the chief guest. Dr. Sahai was introduced to the members of the Association, by Dr. B. P. Singh. President Dr. Ved Ratna requested Dr. Sahai to deliver his lecture.

Dr. Sahai giving a brief history of the Medico-legal work in India said how he has been able to form a Society where Medico-legal problems are discussed. The Society consists of learned judges, vakils and doctors in Medico-legal profession. He also advised the members as how to proceed in the examination if Medico-legal cases. After he finished he was asked some questions to which he replied.

BEGUSARAI BRANCH—The following have been elected as office-bearers of the branch for the year 1961-62 in the meeting of the Begusarai held on 30-7-61 under the presidentship of Dr. M. Akhtar.

Dr. R. P. Gupta—President; Dr. A. L. Choudhury—General Secretary; Dr. H. Rahman—Representative, State Council; Dr. P. Gupta—Representative, State Council (Alternate); Dr. G. Singh—Representative of Central Council; Dr. A. L. Choudhury—Representative of Central Council (Alternate).

BERHAMPUR BRANCH—The annual general meeting of the branch was held on 1-10-61 in the Club premises at 7 P.M. The annual reports and accounts were adopted.

Office bearers for the year 1961-62 were elected with Dr. A. B. Mazumder as President, Dr. S. Ghosal as Vice-President, Dr. M. Barman as Secretary, Dr. A. K. Thakur as Asst. Secretary, Dr. T. Turafder as Treasurer and Dr. J. N. Addy as ex-officio Auditor.

BHILAI STEEL PROJECT BRANCH—A clinical meeting was held at Sector-I Hospital on 7th September, 1961. The following cases were presented :

1. A case of brain Abscess—Dr. P. R. Kulkarni; 2. Two Cases of Nasopharyngeal Malignant Growths—Dr. P. R. Kulkarni; 3. A case of Progressive Muscular Atrophy —Dr. D. C. Sen; 4. A report on 2 cases of Peptic Ulcer Perforations—conservative management—Dr. N. L. Kalle; 5. A case of Tubercular Pericarditis with pulmonary tuberculosis—Dr. H. S. Sathe.

The association condoled the death of Dr. Subodh Mitra and observed two minutes silence in his memory.

A clinical meeting was held at Sector-I Hospital on 21-9-61 at 6-30 P.M. A talk was held on "Female Sterility Factors". The participants were :—Dr. Miss K. B. Dave, Dr. Mrs. L. Kulkarni.

The following short cases were also presented : A case of Congenital Dislocation of Hip by Dr. Subrata Roy Choudhary and A case of Hashimoto's Disease by Dr. N. L. Kalle.

A clinical meeting was held on Oct. 5, 1961 at Sector 1 Hospital. The following cases were presented; (1) A Case of Aplastic Anaemia—Drs. D. R. Monga and S. C. Shrivastava; (2) A Case of Lathyrism—Drs. D. C. Sen and M. M. Mukherjee; (3) An Atypical Case of Tuberculous Meningitis—Drs. D. C. Sen and M. M. Mukherjee.

BIHAR STATE BRANCH—The following have been elected as office-bearers of the State Branch for 1961-62. President—Dr. (Miss) M. P. John; Vice-Presidents—Dr. Brajbansi Prasad (Headquarters, Patna), Dr. Kapildeo Prasad (North Bihar, Darbhanga), Dr. P. C. Mukherjee (South Bihar, Bhagalpur), Dr. D. P. Dhar (Chotonagpur, Ranchi).

LT. RAJAT CH. RAY

Lt. Rajat Chandra Ray aged 27 years a member of the Patna branch I.M.A. was a member of the troupe which successfully ascended the Nilkanth peak on June 13, 1961. Lt. Rajat Chandra Ray went up to the base camp (height, 16,500 ft. height of Nilkanth, 21,500 ft.).

BIJAPUR BRANCH—A trip to Ajanta and Ellora was arranged for the members of the branch on 2-2-61. 26 members with their families joined the trip. The party visited Sholapur, Tuljapur, Aurangabad, Ajanta, Ellora, Shirdi, Nagar, Rahuri and Pandharpur.

Dr. S. R. Jigaginni, one of the branch members, was felicitated in the meeting held on 5-3-61 on his appointment to the Municipal School Board.

A general meeting was held on 23-3-61. Dr. G. N. Mangalvedhekar was in the chair. The branch requested Central I.M.A. and Gauhati branch for a compromise and the case should be withdrawn from the court in the interests of the fair name of the association and profession. The branch requested the State D.M.S. to approach the Government to restore the honorary posts at the Civil Hospital, Bijapur.

The Managing Committee Meeting was held on 30-5-61 and it considered the availability of the sites for the I.M.A. building. The same were placed before the Deputy Commissioner who was the Chief Guest on the "Moon Light Dinner" of the branch on the same day. He assured his co-operation.

A farewell meeting was held on 28-6-61 on the occasion of transfer of the District Surgeon, Dr. Azeemkhan. Dr. G. N. Mangalvedhekar was in the chair. Dr. M. D. Mahindrakar paid tributes to the District Surgeon.

A General Body Meeting was held on 5-7-61. Dr. G. N. Mangalvedhekar was in the chair. Union Health Minister, Shri D. P. Karmarkar was the chief guest. Dr. M. D. Mahindrakar introduced all the members to the guest and requested the guest to speak. Shri Karmarkar gave details of the 3rd plan regarding health. 40 members were present.

The members of the Managing Committee met the Health Minister, Dr. K. K. Hegde on 16-7-61 and discussed the memorandum which was submitted during his last visit in November 1959. Discussion took place regarding the Medical School which was to be opened here.

A General Body Meeting was held on 3-8-61. Dr. G. N. Mangalvedhekar was in the chair. 20 members were

present. They voted for the I.M.A. President and Vice-Presidents. Constitution of the I.M.A. , Bijapur branch was passed unanimously.

BHOPAL BRANCH—A clinical meeting of the branch was held on 18-9-61 in Lecture Hall of Gandhi Medical College, Bhopal. Dr. R. P. Bhargava, Vice-President was in the chair. Twentyfour doctors attended the meeting. Dr. S. S. Gupta, Professor of Pharmacology, spoke on "Psychotropic and Antiasthmatic effect of a few Ayurvedic remedies used in Asthma".

BOMBAY BRANCH—The meeting of the branch held on 16-9-61 expressed its deep sense of sorrow at the sad demise of Dr. Rochiram Amesur, a past president of the Indian Medical Association, an undaunted fighter in the cause of medical profession and the Indian Medical Association. He was an active member of the Association all his life and always maintained its dignity and prestige.

The meeting also offered its condolence to the members of his family.

BOMBAY TERRITORIAL BRANCH—At the meeting held on 9-9-61, the Bombay Territorial Council, I.M.A. expressed its deep sorrow at the demise of Dr. Rochiram Amesur, a past president of the Indian Medical Association, an undaunted fighter in the cause of medical profession and the Indian Medical Association, and an active member of the association all his life who always maintained its dignity and prestige.

This Council offered its condolence to the members of his family. It also passed the following resolution :

"The Bombay Territorial Council, I.M.A. learns with deep regret the sad and untimely demise of Dr. Subodh Mitra, the illustrious son of our motherland. Dr. Subodh Mitra's contribution to the various fields of Obstetrics and Gynaecology and especially his vainable contribution towards the curse of humanity—Cancer Cervix, earned great appreciation from the scientific world. He was an eminent Gynaecologist known widely at home and abroad. He ably executed his work in the field of education as the Vice-Chancellor of the Calcutta University and it will be an irreparable loss to us all by his conspicuous absence at the 2nd Asiatic Congress of Obstetrics and Gynaecology of which he was the chief nucleus." The members of the Bombay Territorial Council, Indian Medical Association conveyed their heartfelt condolences to the bereaved family and prayed to the Almighty to rest his soul in peace.

CHICKMAGALUR BRANCH—The annual general body meeting of the branch was held on 26-8-61 under the presidentship of Dr. D. R. Govinda Rao. 27 members were present. The annual receipt and expenditure statement for the year 1960-61 was read and passed unanimously. The following office bearers for 1961-62 were elected. President—Dr. D. R. Gobinda Rao; Vice-President—Dr. G. M. J. Pais; Hony. Secretary—Dr. B. Rama Rao; Hony. Joint Secretary—M. Rajasekharappa; Central Council Member—Dr. L. Shankar Murthy; Hony. Treasurer—Dr. B. S. Venkataramana Setty.

Dr. B. S. Venkataramana Setty, District Surgeon, presented a case of Addison's Disease in an adult female, aged about 48 years which was discussed by the members.

Dr. M. Rajasekharappa, Joint Secretary, read the secretary's report for the year 1960-61, and also the annual receipts and payments for the year 1960-61. The reports were approved, subject to audit. A proposal was made for the appointment of auditor and the audited report should accompany the balance sheet. The House approved the proposal.

The meeting decided to request the State Branch of I.M.A. to request the Government of Mysore, to transfer the lien of all the willing Medical Officers and Assistant Medical Officers to the Department of Public Health; as the medical institutions at and below the Taluk level are transferred to the Department of Public Health from June 1960. Since the doctors having a lien in the Medical Department and working in the Public Health Department are not being given any chance of promotion in the Public Health Department.

The meeting also requested the president of the Chikmagalur Municipality to allot a free site for the building of the Association near about the vicinity of the District Hospital Chikmagalur and to request the Government of Mysore to grant a site in the vicinity of the District Hospital, Chikmagalur, preferably in the District Commissioner's Compound, to put up a building of the Indian Medical Association, Chikmagalur.

A farewell party to Dr. D. R. Govinda Rao, President and Dr. B. Rama Rao, Secretary who were on transfer from 10-9-61 was arranged under the chairmanship of Dr. H. D. S. Acharya. Dr. M. Rajasekhrappa, Joint Secretary and other members spoke on the occasion.

CHITRADURGA BRANCH—The annual general body meeting of the branch was held on 24-9-61, at District Hospital, Chitradurga. Dr. H. S. Lakshminarayana, District Surgeon, Chitradurga presided.

Thirtyfour members were present and 3 invitees from the Devangere branch.

After the welcome speech by Dr. H. S. Lakshminarayana, Dr. S. V. Govinda Setty, physician, Victoria Hospital and Dr. R. H. N. Shenoy of K.M.C. Hospital, Hubli, spoke on Management of Diabetes and some common Surgical Operative Procedures, for general practitioner. The proceedings of the last meeting were read by secretary and also the report of the last year. The balance sheet was adopted. The following persons were elected as office-bearers for the year 1961-62 : President—Dr. B. Ramakrishna Reddy; Vice-President—Dr. Rajeswari; Secretary—Dr. A. G. Veeranna; Joint Secretary—Dr. Chhodamani; Treasurer—Dr. S. Shivanappa; Central Council Members—Dr. H. S. Lakshminarayana; Provincial Council Members—Dr. B. K. Nagaraj and Dr. S. Shivanappa.

DHARWAR BRANCH—The annual meeting of the branch was held on 9-9-61 in the Association Hall. The following members were elected as office-bearers for the year 1961-62 : President—Dr. Upadhye; Hony. Secretary and Treasurer—Dr. C. S. Kuradikeri; State Council member—Dr. Channabasavanna; Central Council member—Dr. S. M. Kuradikeri, Alternate—Dr. K. M. Kale.

DONDAICHA BRANCH—A monthly meeting of the branch was held on 24-9-61. The Territorial branch was requested to ask the government of Maharashtra to clarify the position of the government regarding the administration of anaesthesia by qualified medical practitioners—but not qualified in anaesthesia, in light of the recent judgment by a Bombay Magistrate in case of a Bombay doctor who was working as a registrar in one of the public hospitals of Bombay and had administered anaesthesia to a case during operation and which unfortunately expired later.

ERODE BRANCH—A meeting of the branch was held on 26-8-61, Dr. (Capt.) R. S. K. Raman presided. Dr. S. Subramaniam, Chief Medical Officer, Government Hospital, Erode, spoke on the "Upgrading of the present Government Hospital, Erode. In the course of his talk, Dr. Subramaniam made out the following points :—

1. With some alterations, the present hospital can be made to accommodate 2 Wards of 28 patients, thus bringing up the bed-strength to 156, without incurring any extra cost. Besides in the first floor 2 Wards could be built, with the result we can have an hospital of 212 beds catering to the needs of Erode and the surrounding

villages; 2. A Blood Bank is an absolute necessity in Erode; 3. The X-ray Department has to be made up-to-date with facilities for screening and fitted with Physio-Therapy Apparatus; 4. An up-to-date and well-equipped Laboratory is a necessity for proper diagnosis; 5. At present it is proposed to allot 6 beds to patients suffering from T.B. The Leprotic patients are being examined and treated once a week by visiting doctors. Their visits will be increased to 2 per week.

GHATAPRABHA BRANCH—On 6-8-61 the annual meeting of the branch was held and the following were elected as office bearers for the year 1961-62: President—Dr. M. K. Vaidya; Vice-President—Dr. C. P. Pattanshetti; Hony. Secretary—Dr. G. T. Balankhe.

HAZARIBAGH BRANCH—The meeting of the branch was held at the Civil Surgeon's Chamber on 31-8-61 at 7 P.M. Ten members were present. Dr. Kamla Prasad presided. Elections of President and Vice-Presidents were done by ballot. The members regretted their inability to hold the 22nd State Medical Conference at Hazaribagh. The members were requested to pay their subscriptions regularly and in time.

HOSHIARPUR BRANCH—The annual meeting of the branch was held on 1-10-61 with Dr. M. L. Blaggana (Civil Surgeon) in the chair. The annual report for the year 1960-61 was read and adopted. The following office bearers for the year 1961-62 were elected: President—Dr. Manehar Lal Blaggana; Vice-President—Dr. Balkrishnan; Secretary—Dr. Prithvi Nath Sud; Jt. Secretary—Dr. Harkishan Lal Nayyar; Central Representative—Dr. Sardari Lal Nanda; Provincial Representative—Dr. Mulk Raj Bhasin; Auditor—Dr. Hari Dev Verma.

HYDERABAD BRANCH—The general body meeting of the branch was held on 9-9-61, the following office bearers were elected: President—Dr. B. K. Naik; Vice-President—Dr. M. Vasudeva Rao; Hony. Secretary—Dr. P. Shankar Rao; Members elected to the Central Council—Dr. R. B. Davare, Dr. U. R. Paragoankar, Dr. M. Y. Mirza.

HYDERABAD CITY BRANCH—The annual report of the branch shows a slight increase in membership, membership totalling 215 on the register. The managing committee held 12 meetings. During the year, 12 interesting lectures were delivered by eminent doctors. Receptions were arrangd, for Prof. O. L. Wade, Prof. Greefield and Prof. Pemberton of Belfast University; for the delegates of the Indian Association of Pathologists, Association of Physiologists and Pharmacologists; the Scientific Advisory Board and Advisory Committee of the I.C.M.R.; for Dr. H. N. Shivapuri, the president of I.M.A.; and for Dr. Jacob Chandy. Dr. I. Emmett Hold of New York University and De. W. R. F. Collis of the University College Hospital, Ibadan, Nigeria visited the branch. About 60 members of the branch examined 7357 students. The World Health Day was celebrated as usual on 7-4-61. The Arasthee Memorial Lecture was held and Dr. Jacob Chandy delivered a lecture on Patho-Physiology of Abnormal Movements and its Management. The College of General Practitioners sponsored by I.M.A. commenced its working during the year and refresher courses were conducted.

JAMNAGAR BRANCH—A meeting was held on 23-8-61. Dr. M. V. Rajapurkar was in the chair. 24 members were present.

The following clinical cases were shown: 1. A. Case of Lump in Right Iliac Fossa by Dr. H. L. Patel. 2. A Case of Paraplegia probably due to secondaries from primary in the neck by Dr. P. D. Anjaria. 3. A Case of Gunshot Wound of the Abdomen by Dr. G. H. Upadhyaya. 4. A Case of Carcinoma Tongue with secondaries in the Lung, by Dr. R. L. Vadi. 5. A Case of Suspected Diabetes Insipidus by Dr. P. D. Anjaria. 6. Follow up of the case of Psoas Spasm (presented in meeting XIV dated 19-7-61) by Dr. R. L. Vadi.

A meeting was held on 29-8-61. 33 members were present. Dr. M. V. Rajapurkar was in the chair.

The following films were shown by "Squibb": 1 Siquil, 2. News Review, 3. Moniliasis.

A meeting was held on 22-6-61. 21 members were present. Dr. Rajapurkar was in the chair. The following clinical cases were shown: 1. A case of Multiple Cysts in Abdomen and a Cyst in the Chest, probably hydatid by Dr. H. L. Patel. X-rays were shown; 2. A case of Paraplegia by Dr. S. N. Shah. Myelography was shown; 3. A case of Causalgia by Dr. R. L. Vadi; 4. A case of Large Cold Abscess by Dr. S. N. Shah.

A meeting was held on 19-7-61. 20 members were present. Dr. M. V. Rajapurkar was in the chair. The following clinical cases were shown: 1. Unusual case of Vesicular mole co-existing with normal pregnancy by Dr. S. R. Parikh. Pathology specimen was shown. 2. A case of Hermaphroditism by Dr. G. H. Upadhyaya. Photographs and x-rays were shown. The patient could not come. 3. A case of Psoas Abscess by Dr. R. L. Vadi. 4. A case of Large Splenomegaly by Dr. H. L. Patel. 5. X-ray of a medical student showed stone in kidney region (Right). I. V. Pyelography indicated it to be in renal parenchyma. Lateral x-ray showed it to be in front of vertebral column. Cholecystography proved the stone to be in the fundus or the gall bladder. These x-rays were shown by Dr. S. N. Shah.

Election of President and Vice-Presidents of I.M.A. took place. The President conveyed to Dr. S. N. Shah, a member leaving Jamnagar, good wishes from the house.

A meeting of the branch was held on 5-9-61 at 8 P.M. at Shri M. P. Shah Medical College Hall. Dr. M. V. Rajapurkar was in the chair. 23 members were present.

In the symposium on 'Abdominal Tuberculosis' the following were the speakers: 1. Aetiology and Pathology by Dr. H. H. Shah. 2. Clinical Manifestations by Dr. Suresh M. Baxi; 3. Medical Management by Dr. P. D. Anjaria; 4. Surgical Management by Dr. K. S. Shah; 5. Gynaecological Aspects by Dr. S. R. Parikh and Radiology by Dr. K. N. Baxi.

The annual report of the branch for the year 1960-61 shows that 18 members were enlisted. Membership increased to 74. Nine meetings were held in which clinical cases were demonstrated. The constitution of the branch was amended and given effect to on 1-10-61. Dr. L. G. Rdiy, WHO representative for S.E. Asia was entertained to dinner. At 2 meetings, film shows were arranged. A symposium was held on Abdominal Tuberculosis. Attendance at the meetings was quite fair. The branch took up school health examination during the year.

KALYAN BRANCH—A general meeting of the branch took place on 27-9-61. The following members were elected as office bearers for the year 1961-62. Dr. S. K. Chonbal—President; Dr. P. V. Karkhanis—Secretary.

The Committee chairman mentioned the activities of their respective committees of which the following were notable.

1. Family Planning Day, 2. Triple Vaccine Inoculation to Students of Balak Mandir, 3. Medical Examination of Pupils of New High School, Kalyan, 4. Diabetes Detection Drive Organisation in conjunction with Rotary Club, Kalyan, 5. Speeches by 8 eminent medical men from Bombay during the year, 6. List of Emergency Drugs required in treatment of penicillin shock, ATS shock etc. printed and handed over to each member for ready reference and various other small services which

helped to bring about a social atmosphere among the members.

KANPUR BRANCH—A clinical meeting of the branch was held on 29-9-61 under the presidentship of Dr. Miss C. Rohatgi at the "Temple of Service".

Dr. R. Prasad gave a lecture on Sterilisation in the male, its technique and effects. Interesting discussion followed.

A clinical meeting was held on 22-9-61 under the presidentship of Dr. Miss C. Rohatgi at the "Temple of Service", Kanpur at 4-30 p.m.

Dr. B. L. Agarwal, Reader, G.S.V.M. Medical College, Kanpur gave panel discussion on Dyspepsia and Dysenterics. Interesting discussion followed.

KASHMIR BRANCH—A general meeting of the branch was held in Srinagar Club on 5-9-61 at 4-30 P.M. wherein the revision of pay of the medical staff was discussed and it was resolved that sub-committee of three members be formed, who will see the Prime Minister of Jammu and Kashmir State in this connection.

KATIHAR BRANCH—The annual general meeting of the branch was held on 29-9-61 and Dr. R. P. Sood was in the chair. 26 members were present in the meeting. The annual report presented by the Secretary was adopted. The accounts of the year 1960-61 and the budget estimates of the year 1961-62 were passed.

Election of the office bearers for 1961-62 were as follows: President—Dr. R. P. Sood; Vice-President—Dr. J. P. Srivastava; General Secretary—Dr. P. C. Mitra; Joint Secretary—Dr. K. Singh; Central Representatives—Dr. M. R. Banerjee and Dr. P. Bhattacherjee; Provincial Representatives—Dr. R. K. Ghose and Dr. S. Tripathi; Auditor—Dr. M. Banerjee.

K. G. F. LOCAL BRANCH—The annual general body meeting was held on 29-9-61 in the K. G. F. Hospital, Champion Reefs. Seventeen members were present. The statement of accounts for the year 1960-61 was accepted. The following were elected as office bearers for the year 1961-62:

President—Dr. B. N. Krishnamurthy; Vice-President—Dr. H. A. Nagaraja Rao; Hony. Secretary—Dr. C. Rajasekhar; Hony. Joint Secretary—Dr. M. N. Shama Sundara Rao; Hony. Auditor—Dr. B. N. Sreenivasa Rao; Member State Council—Dr. H. A. Nagaraja Rao; Member Central Council—Dr. M. N. Venkata Subbaiah.

The following films were screened: 1. Haemorrhoids and early detection of Cancer, 2. Hidden Tears.

KHAMGAON BRANCH—In the annual general meeting of the branch held on 24-9-61 at the residence of Dr. K. N. Agarwal, the following office bearers were elected for the year 1961-62: President—Dr. P. G. Ekbote; Vice-President—Dr. W. B. Adbe; Hony. Secretary—Dr. K. N. Agarwal; Jt. Hony. Secretary—Dr. T. K. Nagda; Representative on the Territorial Branch—Dr. P. M. Chande.

The annual report of the branch for 1960-61 showed slight decrease in membership. Twelve monthly meetings were held during the year. The branch co-operated with Malaria Eradication Programme and also started Immunisation of Children with Triple Antigen.

KHARAGPUR BRANCH—The annual general meeting of the branch was held on 24-9-61. The annual accounts for 1960-61 were accepted.

The following were elected as office bearers for 1961-62:

Dr. S. Sen—President; Dr. B C. Ghose—Vice-President; Dr. H. K. Guha—Hony. Secretary; Dr. B. N. Sen—Hony. Treasurer.

MATHABHANGA BRANCH—The following are the present office bearers: President—Dr. M. C. Saha; and Secretary—Dr. N. G. Kundu.

The branch organised clinical meetings fortnightly: 1. At the meeting held on 29-7-61 Dr. M. C. Saha discussed on Peptic Ulcer; 2. at the meeting held on 12-8-61 Dr. S. C. Ghosh discussed on Diphtheria, at the meeting held on 26-8-61 Dr. P. C. Saha discussed on Rheumatism, 4. at the meeting held on 9-9-61 Dr. N. G. Kundu discussed on Eczema and its Treatment.

MEERUT BRANCH—The general meeting of the branch was held on August 13, 1961 at 4 P.M. in the premises of Dr. Bhupal Singh Medical Hall, Meerut. Members present, 50. Owing to the illness of the President, the immediate past President Dr. A. S. Maheshwari took the chair. Proceedings of the last meeting held on 27-7-61 were confirmed.

Following 2 resolutions were unanimously adopted: "The members prayed to Almighty for the speedy recovery of the President, Dr. R. Mital, who had an attack of Angina Pectoris on the night of 11th August, 1961."

The members congratulated Dr. R. R. Mital, the President on his being elected as Secretary, Meerut College, Meerut.

The election of the President and 3 Vice-Presidents of the I.M.A. (Central Office) was made and the names sent to the Central Office. Dr. A. S. Maheshwari was nominated as representative to the Telephone Advisory Committee. Photo of late Dr. Krishna Dutt, the hony. secretary presented by Dr. (Mrs.) V. Datt to the Library, was gratefully accepted. Major L. D. Khurana, Surgical Specialist, Military Hospital, Meerut gave a talk on the aetiology, pathology and management of "Intestinal Obstruction", which was followed by discussion.

The 14th Anniversary of India's Independence Day was celebrated on Tuesday the 15th August 1961 at 3-30 P.M. by the members and their families. The function started with "Bandemataram" sung by Usha Rani, daughter of Dr. Prem Chandra. Dr. (Mrs.) Sushila Goel performed the Flag Hoisting Ceremony. There was music and songs by the children of the members.

Dr. O. P. Goel, Dr. Ujagar Singh, Dr. K. G. Mithal and Dr. A. S. Maheshwari gave short speeches befitting the occasion. In the end Dr. J. L. Caroli standing under the flag urged that every body should make his best efforts to maintain the freedom so hardly achieved, and stressed for the full co-operation of the members with the III Five Year Plan. Then 'Bhajan' and Music was performed by Pt. Kailash Chandra for about an hour which was very much appreciated by the members.

The general meeting of the branch was held on 29-7-61 at 5-50 P.M. in the premises of P. L. Sharma Hospital, Meerut. Members and guests present—40.

As a message of regret for inability to attend the meeting was received from the President—Dr. R. Mital, so Dr. Suraj Bal was unanimously voted to the chair.

The following agenda was gone through: 1. Proceedings of the last general meeting held on 22-7-61 were read and confirmed. 2. Central circular dated 1st July 1961 regarding election of President and 3 Vice-Presidents for the I.M.A. for 1961-62 was postponed for the next meeting. 3. Letter of Municipal Medical Officer of Health, Meerut regarding Gastroenteritis and Cholera was read and noted. 4. Letter of Dr. R. C. Agarwal regarding conferring on him with Fellowship of American College of Surgeons (F.A.C.S.) was read and it was decided that a letter of congratulation be sent to him. 5. Then the President requested the hospital doctors to demonstrate some cases.

Dr. R. N. Singhal demonstrated a case of Quillan Barre Syndrome and discussed the clinical features and treatment. He then presented another case showing Myopathy of Muscles of Shoulder. Then the above cases were open for discussion and some of the members took part in it.

MONGHYR BRANCH—The annual meeting was held on 24-9-61 under the presidentship of Dr. K. P. Mitra. Hony. Secretary placed the annual report of the branch of the session 1960-61 which was adopted. The following members were then elected as representatives to the Central Council and State Council and office bearers of the local branch :

Representative, Central Council—Dr. B. B. Bose; Representatives, State Council—Dr. M. P. Vaishya, Dr. K. M. Nand, Dr. M. D. Sahu, Dr. Jogendra Prasad and Dr. D. B. Haldar; Office bearers of the local branch : President—Dr. D. P. Singh; Vice-Presidents—Dr. H. K. Verma and Dr. S. K. Basu; Hony. Secretary—Dr. J. Prasad; Hony. Jt. Secretaries—Dr. A. L. Sharma, Dr. P. N. Verma; Hony. Treasurer—Dr. J. Bhagat; Hony. Auditor —Dr. A. C. Ghosh.

Amendments to the constitution were then adopted. Dr. D. P. Singh, Dr. K. M. Nand and others took keen interest in the building of the local branch, and the members present promised amounts for the construction of the same. The house then transacted other routine business.

The annual report of the branch for 1960-61 shows that altogether 10 meetings were held during the year under review of which 7 were ordinary meetings, 1 emergent meeting, 1 condolence meeting and lastly this annual meeting.

The following papers were presented in the meetings : 1. Pain Abdomen by Dr. Ramjee Singh, 2. Uraemia and Problems of Cardio-Vascular Diseases by Dr. Awadh Kishore Narayan Sinha, 3. Haematuria by Dr. K. N. Pathak, 4. Squint and Common Causes of Blindness by Dr. J. N. Rohatgi, 5. Chronic Respiratory infections by Dr. B. Dhar, 6. Family Planning by Dr. K. P. Mitra.

As usual the Health week was celebrated along with Statewide celebration from 19th to 25th March, 1961. During the year 30 new members were enlisted totalling 103. On 1st October the total membership showed a fall to 97 due to transfer of members. Seven members from the branch attended the state Medical Conference at Ranchi in November 1960.

MYSORE BRANCH—The annual general body meeting was held on 30-9-61, Dr. H. V. Suryanarayana Rao, presided. 17 members were present. The Hony. Secretary read the report for the year 1960-61. The audited account and the budget for the ensuing year were passed.

The following members were elected as office bearers for the year 1961-62 : President—Dr. V. Ramachandra Naidu; Vice-President—Dr. Y. P. Rudrappa; Hony. Secretary—Dr. Anandi Bai Prasad; Hony. Jt. Secretary—Dr. R. Narayana Swamy Setty; State Council members—Dr. K. Bosappa; Dr. M. V. Jayamma, Dr. R. Sethadri Iyangar, Dr. P. R. Satyanarayana Setty; Central Council members—Dr. H. V. Suryanarayana Rao, Dr. Anandi Bai Prasad; Internal Auditor—Dr. D. Srinivasa Murthy; External Auditor—Shri H. S. Venkata Rao.

The following resolution was passed :

"In view of the introduction of prohibition in Mysore the Government may be approached for the issue of permits for alcohol for all members of the Indian Medical Association for medical purposes."

NAVASARI BRANCH—A meeting of the branch was held on 24-9-61. The following office-bearers were elected for the year 1961-62 : President—Dr. (Smt.) Ramaben D. Kapadia; Vict-President—Dr. (Smt.) S. R. Ponkse; Hony. Secretary—Dr. Babulal H. Shah and Treasurer—Dr. R. C. Patel.

After the election a symposium on Diabetes Mellitus was held. Dr. T. M. Desai spoke on pathology, clinical feature and recent oral treatment of the disease. Dr. J. C. Patel covered the paediatric aspect, Dr. (Smt.) M. T. Rana talked on obstetric aspect, Dr. Sutaria covered the ophthalmologic aspect and Dr. Vashi the surgical aspect while Dr. A. K. Desai covered the subject for general practitioners. After the symposium Dr. R. G. Desai, the president of Navsari branch, I.M.A. summed up the subject and thanked all the speakers.

Next Dr. Babulal H. Shah, Hony. Secretary of the union presented the report of the working of the whole year and thanked all the members and specially Dr. R. G. Desai, the president for the co-operation he received.

In this year nearly 20 meetings were held of clinical interest and the branch successfully completed the triple-vaccine campaign sponsored by the Lion's Club, Navsari, this year.

NIZAMABAD BRANCH—The clinical meeting of the branch was held on 30-6-61 at 6 P.M. at District Hospital, Nizamabad, under the Chairmanship of Dr. Md. Gulam Nabi, Superintendent and District Medical Officer, Nizamabad. Dr. Ather Hussain, presented two cases (1) Young male with Nodules all over the body and another case of male with Cervical Rib. Dr. Subba Rao, presented a child with Purulent Meningitis having blindness. Another male aged 19 years of T. B. Hip Joint. Dr. Razzack, demonstrated a case of Miliary Tuberculosis with x-rays, another case of Hemiplegia in a child of 5 years, which proved to be T. B. Meningitis. He demonstrated two cases of Hypertrophic Pyloric Stenosis, typical and atypical which were operated successfully, and incidently these were the first two cases in Nizamabad District.

Dr. Janardhan Reddy, presented a case of Tumour in Abdomen in a male aged 50 years which was diagnosed to be Hydatid Cyst of Left Lobe of Liver.

Dr. Rama Rao, spoke about the incidence of Congenital Heart Diseases in school going children. He said that he examined 15,537 children, out of which 12 cases were of CHD i.e. 0·076%, 6 were ASD, 3 were PDA and 2 were VSD, one was not diagnosed properly.

Dr. Gulam Nabi, demonstrated a female aged 30 years having full term tubal pregnancy. He demonstrated another case, a male aged 25 years having big tumour arising from undescended testis in the abdomen. Both the above cases were operated successfully.

On 12-8-61 there was a special meeting of the branch on the visit of Major K. N. Rao, Director of Medical Services, Dr. Gulam Nabi gave a welcome speech describing in brief the achievements made by the distinguished guest. Major K. N. Rao, addressed the members and described in detail the Health Programme of 3rd Five Year Plan. He suggested for some more improvements in the existing facilities.

He requested the members to extend their activities and do their utmost for the well-being of the sufferers.

PATNA BRANCH—The annual general meeting of the branch was held on 10-9-61 at 4-30 P.M. in the Medical Association Building under the Presidentship of Dr. S. Samaddar. After a group photograph was taken, the minutes of the last Annual general meeting were read and confirmed. This was followed by discussion on business arising out of the proceedings in which the members wanted to know about the college of general practitioners. Dr. A. K. Sen the State Secretary then explained the position with regard to college of general practitioners in which he said that the matter was under the active consideration of Government and a decision was likely to be taken very soon.

The Secretary then read out his report for the year 1960-61 in which he gave an account of the activities of the branch in which he detailed an all round improvement in the working of the Association. This report was then adopted. The financial Secretary present-

ed his report of the auditor for the year 1960-61 which was also adopted.

The president in his presidential remarks thanked the Executive Committee members for their kind and active co-operation in running the association. He also gave out certain suggestions for increasing the membership of the Association. This was followed by the election of President and Vice-Presidents for the Indian Medical Association and Bihar State Branch. This was followed by election of President, Vice-Presidents and other office-bearers of the Patna Medical Association for 1961-62. The following office-bearers were elected :

President—Dr. S. Samaddar; Vice-Presidents—Dr. (Mrs.) Malti Rohatgi, Dr. B. B. Mukherjee, Dr. Ram Govind Singh; Hony. Secretary—Dr. A. K. Sinha; Hony. Joint Secretary—Dr. Phani Bhusan Pd., Dr. B. P. Jamuar, Dr. Lala Sadho Prasad; Hony. Financial Secretary—Dr. S. B. Gupta; Members of Central Council—Dr. S. Samaddar, Dr. Paras Nath Sinha, Dr. N. P. Tripathi; Members of the State Council—Dr. Sharda Prasad Sinha, Dr. Mahesh Narayan, Dr. Paras Nath Sinha, Dr. (Mrs.) R. Barat, Dr. Ram Govind Singh, Dr. Fakhrul Haran, Dr. S. B. Lal, Dr. A. K. Guha, Dr. (Mrs.) Deventala Singh, Dr. J. N. Rohatgi, Dr. Mahadeo Chand, Dr. G. P. Sharma, Dr. S. C. P. Sinha, Dr. (Mrs.) S. Nandy.

The scheme of mass enrolment drive was discussed and different members gave very valuable suggestions. It was resolved that from next year the Annual General Meeting of Patna Medical Association be transformed into an annual conference in which there should be inauguration and a whole day function followed by contributory dinner.

After vote of thanks to the chair and to the members the meeting came to a close.

RAIGARH BRANCH—In a meeting of the branch held on 10-9-61 the members expressed their grief at the sudden demise of the great gynaesologist of the country Dr. S. Mitra at Vienna. They offered homage to the departed soul by standing in silence for 2 minutes and offered condolence to Mrs. Mitra at Calcutta.

ROORKEE BRANCH—The sixth meeting in the year 1961 was held at the residence of Dr. R. C. Srivastava, under his presidentship on 8-7-61 to bid farewell to Dr I. S. Singh and Dr. Ranjit Singh of the University Hospital and to Dr. O. P. Gupta and Miss Falls of the Civil Hospital who were transferred simultaneously. 14 members were present. The president Dr. R. C. Srivastava, was at home to the members of the Association.

The seventh meeting was held at the residence of Dr. Madan Mohan Singhal. 13 members were present. Dr. R. C. Srivastava presided. The members strongly protested against registration of B.M.B.S.C. (Ayurvedic Degree) by U.P. Medical Council and asked for reservations of some seats in the Medical Colleges of U.P. for the sons of qualified doctors.

SAHARSA BRANCH—A general body meeting of the branch was held on 4-9-61 at 8 P.M. at the residence of Dr. B. P. Singh under the Presidentship of Dr. B. P. Srivastava, the Civil Surgeon. 18 doctors were present.

Election of officer-bearers was held : President—Dr. B. P. Srivastava; Vice-President—Dr. Guneshwar Prasad Singh; Secretary—Dr. J. Chaudhury; Joint Secretary—Dr. S. B. Ashraf; Treasurer—Dr. G. S. P. Singh; Auditor—Dr. N. L. Mukherjee; State Council Representatives—Dr. Giria Shankar Pd and Dr. M. D. Singh; Central Council Representatives—Dr. Narendra Narayan Dass and M. M. Gupta.

SHAHJAHANPUR BRANCH—The last meeting of the branch for the year was held on 21-9-61 under the presidentship of Dr. Jai Narayan Saksena at the residence of Dr. Paul, the M.O.H. A case of Tubercular Meningitis was presented by Dr. Vishwa Mohan Saksena. It was unanimously resolved that all the qualified members of the profession should be enrolled members of the I.M.A. Members were requested to bring their cases for discussion and demonstration so that all may be benefited.

SHOLAPUR BRANCH—The annual general body meeting of the branch was held on 24-9-61, and office-bearers for 1961-62 were elected with Dr. V. P. Aroskar as President; Dr. G. D. Tagare as Vice-President; Dr. S. D. Patwardhan and Dr. S. M. Mendgudli as Hony. Joint Secretaries; Dr. M. P. Bawle as Hony. Treasurer; Dr. V. H. Kinikar as Hony. Auditor; Dr. G. G. Joag and Dr. M. V. Albal as representatives on Central Council; and Drs. S. G. Gogte, B. S. Chavan, Mrs. S. M. Kirloskar, M. A. Prabhu, M. N. Vaidya, M. J. Chidgupkar (Sr.), P. M. Kalyani as representatives on Provincial Branch; Dr. (Mrs.) V. G. Apte as representative on Dufferin Committee and Dr. J. R. Mayekar as representative on Hind Kusta Nivaran Sangh. The different sub-committees were formed.

The annual report of the branch for 1960-61 shows that the total membership of the branch was 104. Ten clinical and business combined meetings, 1 Business meeting, 1 adjourned general body meeting and 7 special general body meetings were held during the year. Two Executive Body meetings, 9 Executive and Building Sub-Committee meetings; 5 special building committee meetings; 1 purely building sub-committee meeting; 1 school sub-committee meeting; 2 farewell meetings were held. Two meetings of the Provincial Council were attended.

World Health Day was celebrated on 7-4-61. Two medical films were shown. The members attended some important conferences. Refresher Course lectures were given. The branch also entertained a large number of notable guests during the year.

SITAPUR BRANCH—The annual meeting of the Sitapur Medical Association was held at the residence of Dr. B. D. Kapur the acting president on 24-9-61. 24 members were present.

The secretary read the report of the last meeting in which it was emphasised that it is one of the few branches which has celebrated its Silver Jubilee. On this auspicious occasion it was decided to have a piece of land for its own building which also luckily had been secured. Dr. Mehrey Padamshri requested old members to pay Rs. 200/- each towards the building fund.

The following were elected office-bearers for 1961-62 : Dr. B. D. Kapur—President ; Dr. H. L. Patney—Vice-President; Dr. Baijal—Secretary and Treasurer; Dr. S. B. L. Agarwal—Joint Secretary; Dr. Mrs. Kar—Auditor; Dr. R. P. Chopra and Dr. Bhatnagar Central Representatives; Dr. G. D. Agarwal—Provincial Representative.

SRIKAKULAM BRANCH—The Srikakulam District Branch celebrated its Anniversary in the premises of the Government Head Quarters Hospital on 9-9-61. Two distinguished Professors of the Andhra Medical College Dr. P. Kotiah and Dr. G. R. Bhaskar attended the function on invitation. Seventyfive members and medical officers and private practitioners from the different parts of the district attended the function.

Dr. N. P. Devdas, the President, called on Dr. M. V. A. N. Patrudu to introduce the Chief guests to the audience. After the introduction the Joint Secretary of the Association Dr. D. Subba Rao presented his report for the year. He said that there were 37 members in the District Association and also gave a statement, of the amounts collected, and spent during the year.

An electro cardiogram recently acquired by the Hospital was then initiated and put to use by Dr. P.

Kotiah. A portable X-ray apparatus also which has been acquired by the hospital was then switched on and declared open for use by Dr. G. R. Bhaskar. A new well-built thatched shed suitable to accommodate 12 beds for Tuberculosis patients which was built with the help of some local donors was also declared open by Dr. P. Kotiah.

Then Dr. Kotiah addressed the audience at the request of the President on some of the emergencies of chest diseases. Dr. G. R. Bhaskar addressed on some of the common Medico-legal difficulties and advised on the need for detailed notes on the conducting of post mortem examination.

Dr. M. V. Ramarao spoke on the writings of Dr. Rabindranath Tagore and his philosophy. The President then made his closing remarks when he exhorted the members of the Association to renew their membership again by paying their membership fee at an early date.

TENALI BRANCH—A meeting was held in the Co-operative Bank Hall on 16-9-61 with Dr. B. S. N. Sastry in the chair. The minutes of the last meeting were read and passed.

The President gave a short introductory speech about the disorders of heart both congenital and acquired and various operations that are being done now for these different conditions like Mitral Stenosis, Aneurysm of Aorta and Tetralogy of Fallot. He then requested the chief guest Dr. P. Lakshmana Rao, Physician, Guntur Medical College, to deliver the valedictory address.

Dr. Lakshmana Rao spoke about his experiences in his recent study tour of the United States. He dealt with the various abnormalities both congenital and acquired of the heart. He described about the various operations that are being done now in States for all these lesions. Then, he demonstrated various disorders with a number of slides.

The Secretary's report was read and passed. The following office-bearers were re-elected: Dr. B. Suryanarayana Sastry—President; Dr. Y. S. Krisnamurthy—Vice-President; Dr. B. Pallaiah-Secretary; and Dr. B. L. Narasimham—Joint Secretary.

Later, a film was shown on Milton Buccal Varidase and Ledercort in certain skin conditions.

A meeting was held in the Taluk Higher Secondary School permises on 26-8-61 with Dr. B. S. N. Sastry in the chair.

The President made a few introductory remarks about Congenital disorders of metabolism like Fanconis Syndrome, Methhameglobinurea and others. He then requested the guest of the evening Dr. B. Naganna, Professor of Biochemistry, Guntur Medical College, to address the gathering.

Dr. Naganna spoke at length about the genetic background of some of the disorders regarding the inborn errors of metabolism. He also spoke about diseases of Haemoglobin, Sickle Cell Anaemia, Thalassaemia and Haemophilia. He also spoke about the disorders of coagulation of blood and about endocrinal diseases. He next gave a brief account of the causes of production of Cystinuria and Fanconi's Syndrome.

A meeting was held in the Co-operative Bank Hall on 5-8-61. Minutes of the last meeting were read and passed. Dr. Sastry gave a short introduction about the mental ailments, and requested the chief guest Dr. P. Suryanarayana, Lecturer, Mental Diseases, Guntur Medical College, to address the gathering. Dr. Suryanarayana spoke at length on mental deficiency, its aetiology, Symptomatology, diagnosis, its bearing on the society and lastly about the treatment. Later, a few questions were answered by the speaker.

A meeting was held in Chandramouli Hall on 16-7-61 with Dr. S. N. Sastry in the chair on the occasion of the anniversary of late Dr. A. Krishnamurthi.

At the outset, a life sketch of the late Dr. Krishnamurthy was given by the president. Then the members were requested to observe a minute of silence in his memory. Then the chief guest Dr. V. Kameswara Rao, Professor of Medical Jurisprudence, Guntur Medical College, was introduced and was requested to speak on Liver Disorders.

Dr. V. Kameswara Rao gave an informal talk on some aspects of diseases on livers especially about fatty liver, infantile cirrhosis of liver, and about the decompensated and compensated cirrhosis. The election of the Central Office bearers was conducted.

TIRUNELVELI DISTRICT BRANCH—In the annual meeting of the branch held on 30-9-61, the following office bearers have been elected for 1961-62: President—Dr. Mohamed Ismail Sahib; Vice-President—Dr. A. Krishnamurthi; Hony. Secretary and Treasurer Dr. A. S. Krishnan; Member-Auditor—Dr. V. Sridhara Rao; Member for the Central Council—Dr. K. Ramachandra Naidu; Members for the Madras State Branch—Dr. K. Rama Ayyar, Dr. G. Subramanian, Dr. R. Subramaniam and Dr. S. Rajaram Bharati.

VISHAKHAPATNAM BRANCH—The monthly general body meeting of the branch was held at 5-30 P.M. on 2-9-61 at King George Hospital, Visakhapatnam with Dr. N. Alahasingari in the chair.

After tea, the following condolence resolution was passed and a minute's silence was observed.

"The members of the Indian Medical Association, Visakhapatnam Branch have heard with deep sorrow the demise of Lt. Col. T. S. Sastri an active member of the Indian Medical Association. It is resolved at the meeting of Indian Medical Association, Visakhapatnam Branch held on 2-9-61 to keep on record the deep sorrow of the members of the this branch. It is further resolved to convey their sympathies to the bereaved family".

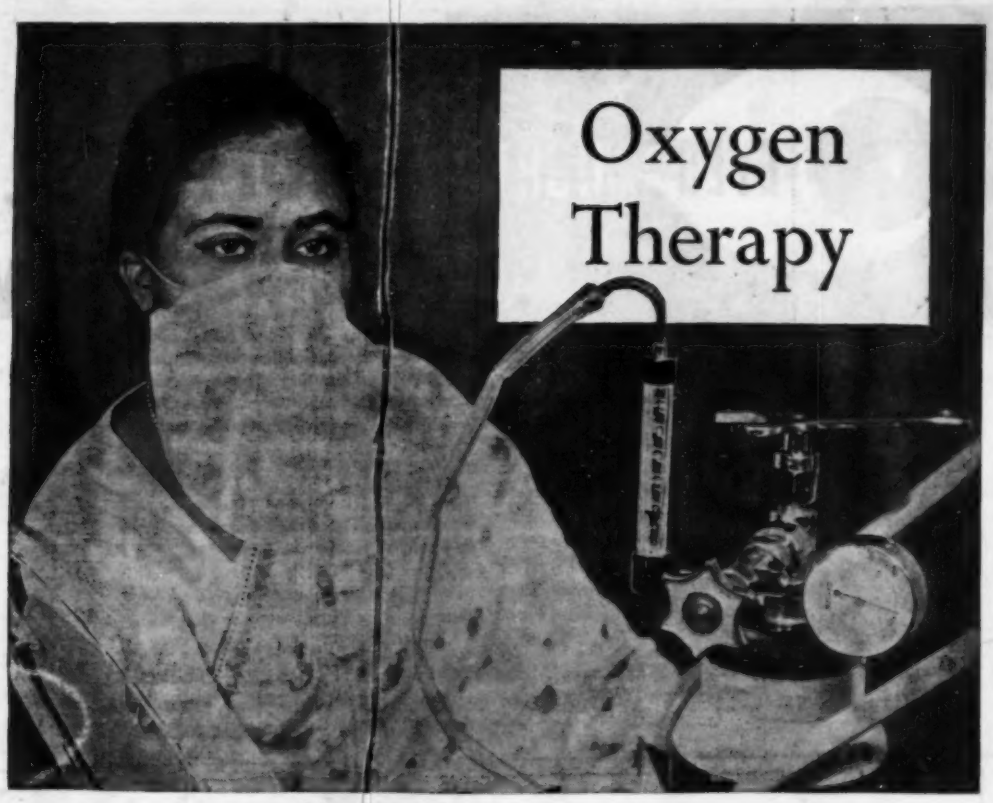
The following films were shown: Role of Varidase in Pelvic Surgery and Varidase as a Local Treatment.

XXVI U. P. STATE MEDICAL CONFERENCE 1961, LUCKNOW

The Twenty-sixth U.P. State Medical Conference will be held at Lucknow on November 28 and 29, 1961 in the Central Drug Research Institute, Lucknow. Details may be had from Dr. B. N. Mehrotra, the Organising Secretary, Canning College Dispensary, Lucknow University, Lucknow.

XXI BIHAR STATE MEDICAL CONFERENCE 1961, SAHARSA

The Twentyfirst Bihar State Medical Conference will be held at Saharsa on December 2-3, 1961, in the District Jail Building. Dr. B. P. Shrivastava is the Chairman of the Reception Committee. Further details may be obtained from Dr. G. S. P. Sinha, the Organising Secretary of the Conference, Saharsa.



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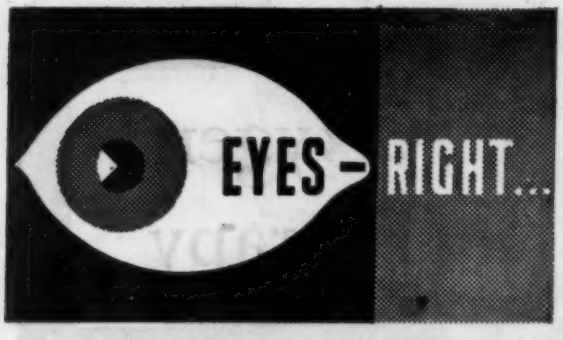

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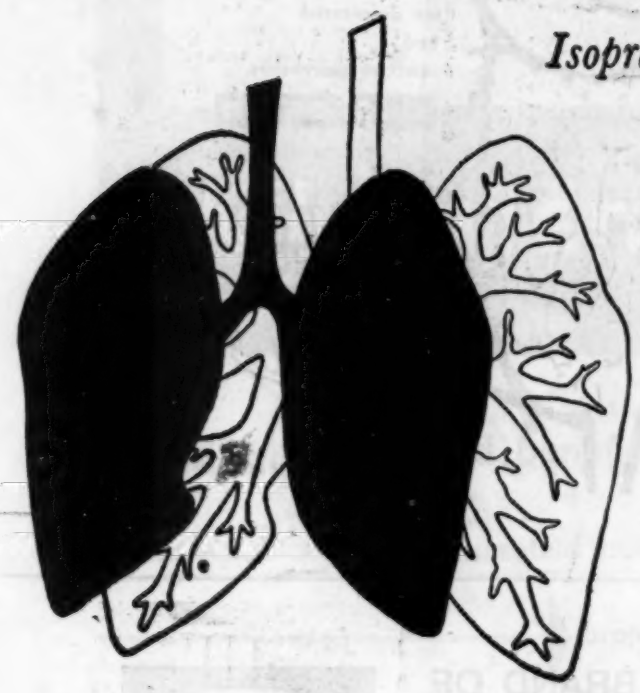

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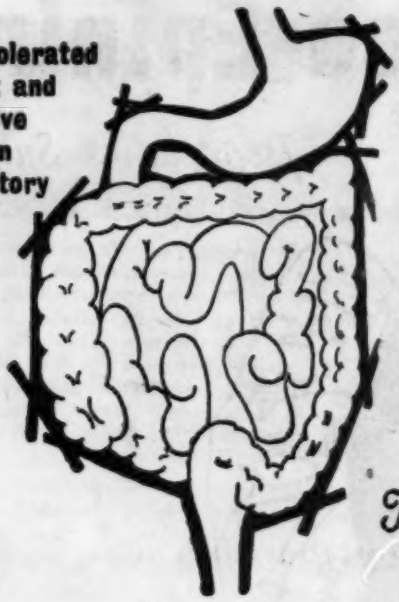

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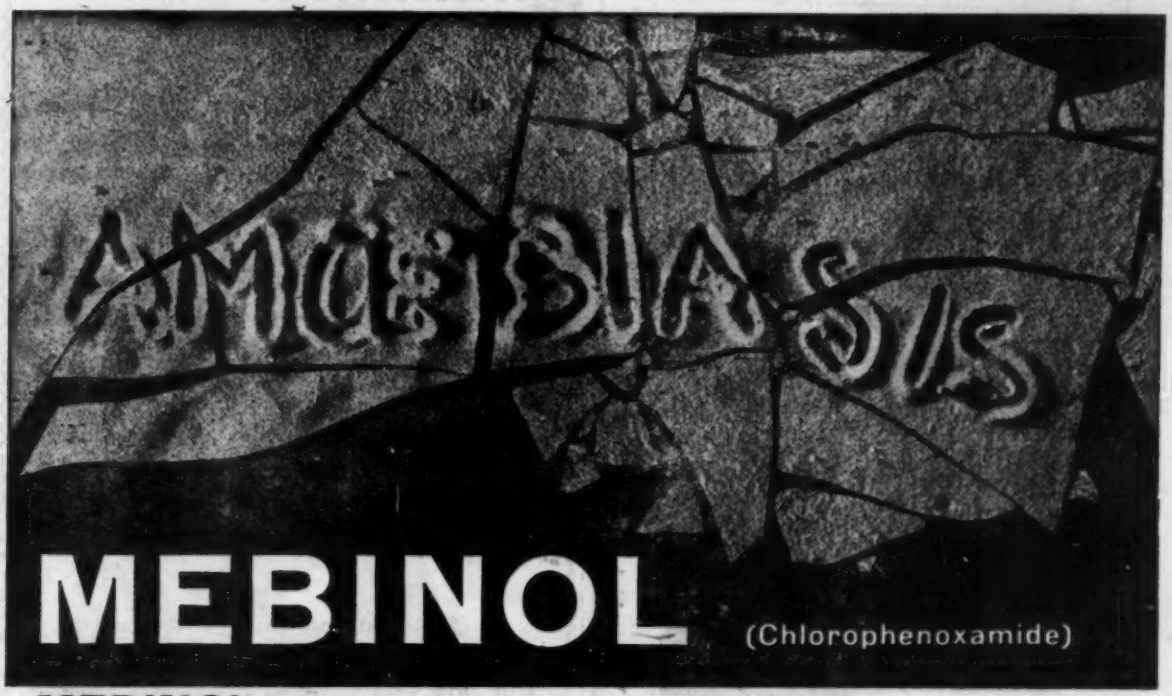

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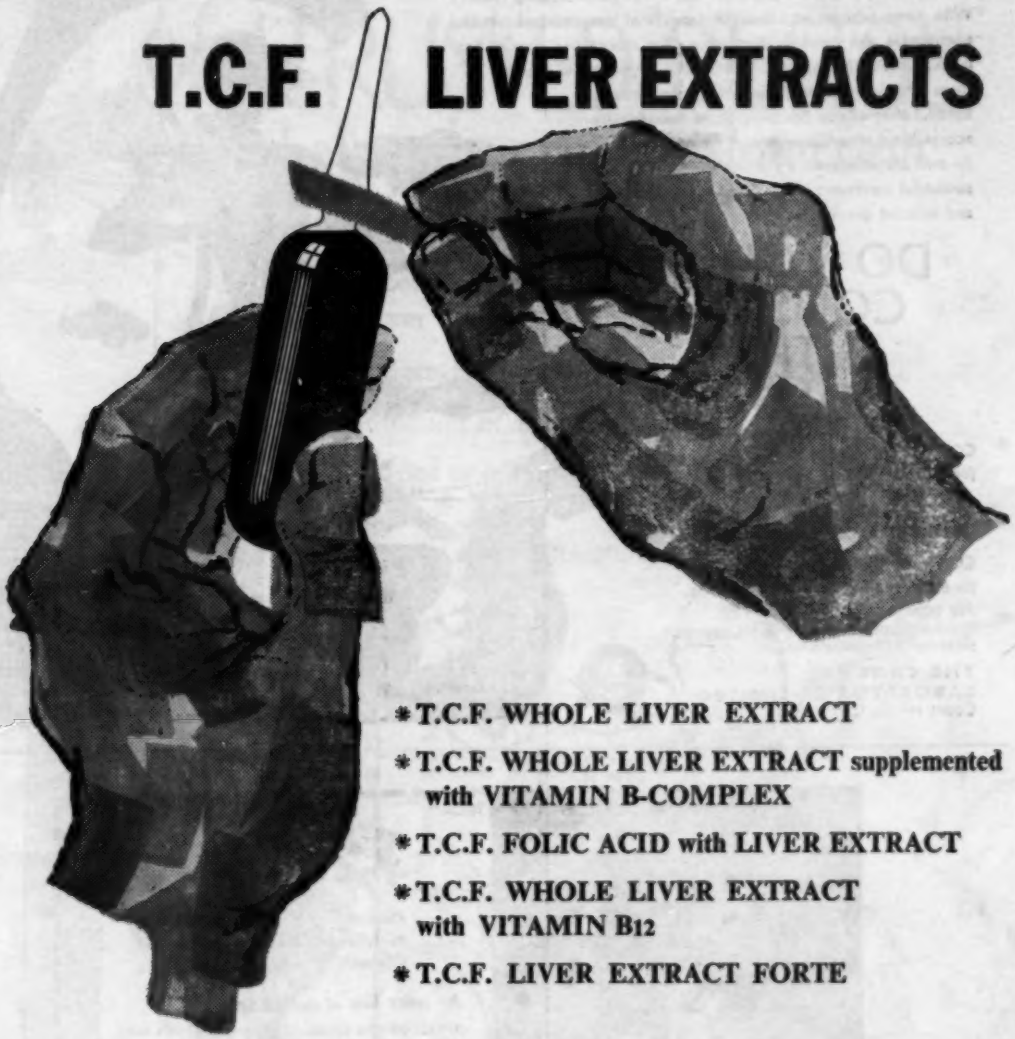

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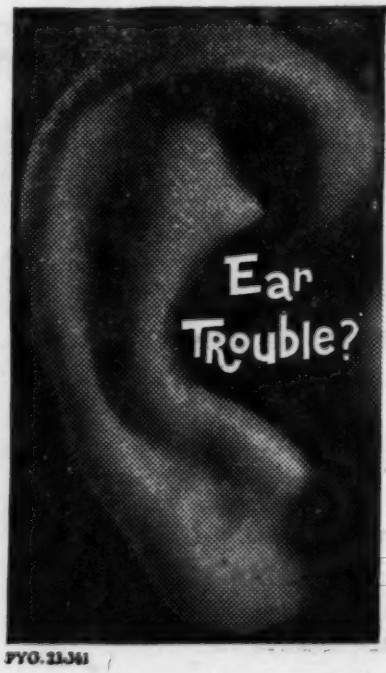

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PROLIFEX

PROTEOLYSED LIVER WITH VITAMIN B-COMPLEX & IRON

Each tablet represents :

Proteolysed Liver Powder (Equivalent to 2 gm. fresh liver)	250 mg.
Stomach Powder	10 mg.
Vitamin B_1	2·5 mg.
Vitamin B_2	1 mg.
Nicotinamide	10 mg.
Vitamin B_6	0·5 mg.
Panthenol	1 mg.
Folic Acid	1 mg.
Vitamin B_{12}	2·5 mcg.
Vitamin C	20 mg.
Ferrous Sulphate (Exsiccated)	100 mg.
Cobalt Nitrate	5 mcg.

BENGAL IMMUNITY CO., LTD.
153, Dharamtala Street, Calcutta-13.

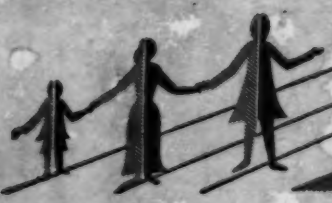
TONOCARNINE FORTE

for balanced amino acid and vitamin mineral therapy

Each 100 ml. contains :
Amino acids and peptides from enzymic hydrolysis of milk protein, liver, yeast & vegetable proteins 15 g.

Vitamin B_1 (Thiamine Mononitrate)	10 mg.
Vitamin B_2	5 mg.
Vitamin B_6	3.5 mg.
Nicotinamide	66 mg.
Panthenol	10 mg.
Choline Dihydrogen Citrate	120 mg.
Folic Acid	5 mg.
Vitamin B_{12}	17.5 mcg.
Sodium glycerophosphate	600 mg.
Potassium glycerophosphate	900 mg.
Manganese glycerophosphate	33 mg.

in an aromatic palatable syrup base containing glycerine



PACKING
in bottles of 225 ml. & 450ml.

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Cover and Advertisement pages printed at the Venus Printing Works 52/7, Bipin Behari Ganguly Street, Calcutta - 12.